Importance of Water in Gardening.

THERE can be no successful gardening without an abundant supply of water. So true is this, and so general, that we may regard it as an axiom among practical cultivators in every part of the world. It has been always so. The history of gardening, back to the earliest period of which we have any record, even to the fabulous gardens of antiquity, shows that one of the first objects of solicitude in the formation of gardens has been to provide for an ample supply of water. In all stages of civilization, under every system of gardening, it has been regarded not only as the basis of *good culture*, but an indispensable element of *beauty*. Our purpose at present, however, is to treat of it in a *useful* point of view only. In a country like ours, with summers intensely warm, and drouths severe and protracted, occurring generally at a season when active and rapid growth is most wanted, a supply of water is peculiarly important. Yet on the whole it receives comparatively little attention. It is a portion of garden economy either not well understood or sadly overlooked.

How common it is to hear people say, "Everything is dried up"—"We have not had a shower in a month." The lawn is brown, as though scorched by fire. Flowers and fruits are dried and shriveled on their stems before maturity. In the kitchen garden, the seeds are lying dormant in the ground, or the plants are parched and withered;—nothing fit for the table; the drouth has made a complete wreck. Yet the gardener, he says, has been busy with his watering-pot early and late; but he had some distance to carry the water, and a sprinkling each morning or evening was all he could afford. And what good has it done? His parched and stunted perishing crops answer, that all such watering is a mere mockery.

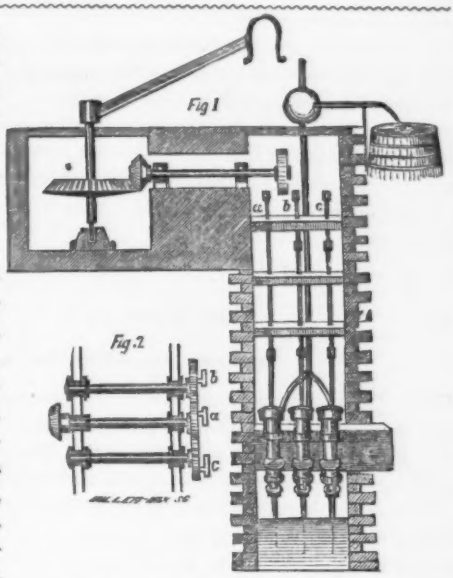
It is not an occasional sprinkling that growing culinary plants require in dry weather, but a daily drenching that will penetrate to every root and rootlet. These plants, to be worth growing at all, should be grown *rapidly*. They must be succulent and tender, which they can not be if stunted. Every one who has traveled through Holland, Belgium, or France, in the summer season, and paid any attention to garden products, must have remarked the excellence of all these esculents; and if they have gone further, and looked into their gardens and modes of culture, they must have seen that water played a most important part in the production of this excellence. Their system of watering is not a mere sprinkling in the morning and evening. We see it flowing in rivulets through and around their garden plots, in the form of an irrigation; or deposited in barrels at every corner, conveyed in pipes from a general reservoir; and from these barrels it is taken in watering-pots, and applied at all hours of the day, if necessary, until every plant has just as much as it requires, considering its nature, the soil, and the weather. Under such a system, a warm and

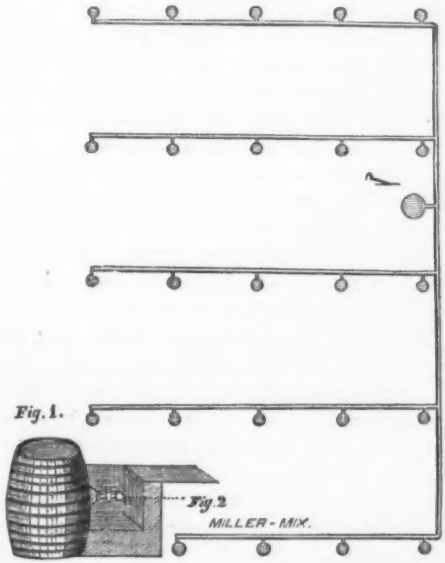
dry climate is an advantage instead of a drawback; and it actually enables the Dutch, the Belgians, and the French, to supply Covent Garden market, in London, with garden products both earlier and better than the very skillful and energetic English market gardeners, with their abundant resources, can produce. Our summer climate is similar in many respects to that of France and Belgium; and we are well persuaded that a general adoption of their thorough hydropathic system would work such an improvement on our garden esculents as would greatly increase their consumption, and enhance the pleasure and profit of that most useful branch of gardening. Another great advantage of an abundant supply of water, is the facility it affords for the application of *liquid manure*—a species of food that every good gardener regards as indispensable to the proper growth of kitchen garden plants, and of great importance to every branch of gardening.

Let us look at the question in an economical point of view. Under the present system, a very small garden in a dry time will consume the labor of at least one man in watering. He probably has to raise it with a hand-pump, and carry it in a common watering-pot from the barnyard, or at least a considerable distance, to the place where it is to be applied. The gardener is probably short of help, and many other things are suffering, so that he is compelled to stop watering as soon as he has given the most needy cases enough to keep them alive till next day. All his watering, all his labor and time, are expended in "keeping things alive." Now suppose that two or three hundred dollars were expended at once in providing an efficient means of raising water into an ample reservoir, from which it could be conducted in pipes to the various quarters of the garden. One man could do more watering than five by the common system, and it could be applied in such quantities as would accomplish the desired end. The actual gain of time and increased products in two or three years would offset the original cost, to say nothing of the convenience, and the satisfaction that the gardener and proprietor both would derive from it. Under such an arrangement, dry weather would lose the terror with which it is now regarded, and the kitchen garden would assume an entirely new aspect.

We shall not at this time attempt any minute description of the various modes of raising water now practiced. The natural facilities that every man finds on his own grounds, or under his control, must guide him in the choice of means. Some may have access to streams, lakes, or other unfailing sources of supply on the surface of the ground, easily raised by a ram or force-pump, and conducted in pipes to a suitable place for a reservoir. Others may be compelled to sink wells, and raise the water with buckets or pumps. In such cases it is economy to sink the well in a place suitable for a reservoir, that the water may pass directly into it from the bucket or pump. The French market gardeners and florists in the neighborhood of Paris, whose arrangements are the most economical and convenient we have seen, invariably have a well in their garden, located on the highest ground. Beside the well is an ample reservoir, from which the water is conducted to all parts of the garden. Some of the more old-fashioned among them raise the water by means of buckets. A wooden frame is erected over the well, to support an upright shaft, on which is fixed a

drum. This shaft turns on a pivot at both ends, and the rope that raises and lowers the buckets is wound on the drum. The rope passes over pullies fixed in the frame immediately over the well, and there is a pole and whiffletree attached to the shaft, for the purpose of applying horse power. But among all the better informed and more enterprizing cultivators, a pump, such as that represented by the annexed figure, has taken the place of the buckets, and is now in very general use. The cut explains its mechanism. It has three pistons, a vertical and a horizontal shaft, and is worked by a horse. Fig. 2 gives a side view of the horizontal shaft terminated by a wheel, *a*, which turns the wheels *b*, *c*. Each wheel has a spindle, to which is fixed a crank fitted to the piston. Such a pump as this raises from three to five thousand gallons per hour, and costs about $250 to $300, according to the depth of the well.—From the reservoir into which the pump discharges, the water is carried over the garden in lead or cast iron pipes, and deposited in barrels or tanks at different points of the garden. These barrels are all sunk in the ground to within a foot or so of the top. Fig. 1 in the second plate represents this arrangement.





This is but an imperfect sketch of what we regard as the best system of supplying gardens with water that we have yet seen practiced extensively and with complete success. If our ingenious

countrymen will turn their attention seriously to this subject, we have no doubt but that they will work out a system as well adapted to their wants as the French *maraichers* (market gardeners) find this is to theirs.

A correspondent who has given considerable attention to this subject, has promised to communicate to us soon the result of his investigations; and we solicit others who may have experience in these matters to add their mite, for we regard the subject as a most important one, lying at the bottom of whatever improvement we hope to accomplish.

THE VAN ASSCHE PEAR.*

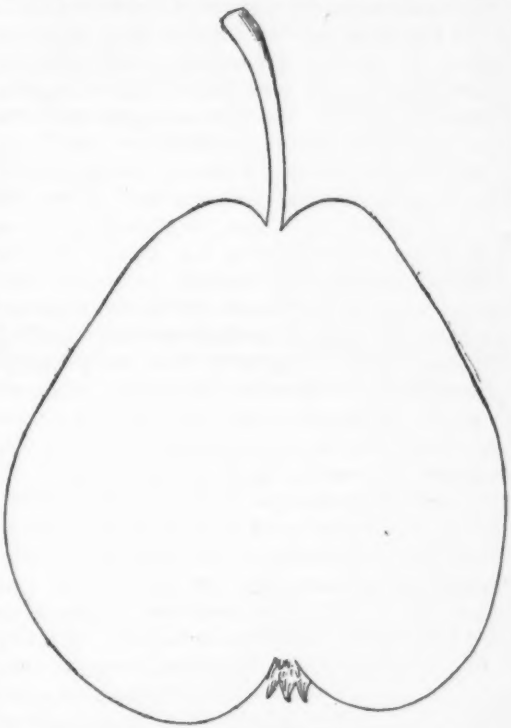
SYNONYMS: *Van Assene, Vanacessé, Van Asshe.*

WITHIN the past ten or fifteen years an immense number of foreign varieties of pears have been imported. Although much is said against the multiplication of sorts, and long catalogues, yet it can not be denied that these extensive importations and experiments have rendered important service to fruit culture in this country; and those who have conducted these experiments at the sacrifice of great cost and labor, and with such patience and perseverance, deserve the thanks of every man who wishes the advancement of this great branch of horticulture. We grant that many have proved to be nothing above mediocrity; many, too, have proved worthless; but a very considerable number of great excellence have been obtained, and have greatly augmented and enriched the resources of fruit growers. Look at the *Beurre d'Anjou*, *Belle Lucrative*, *Doyenne Boussock*, *Rostiezer*, *Doyenne d'Ete*, *Beurre Giffart*, and many others we might name. If only the three first named varieties had been received, they would in our opinion have been a very fair compensation for all that has been done. We remarked often last summer, during the period when the *Doyenne d'Ete* was in eating, that it alone was sufficient to recompense us for years of research and trial, and that it was really worth thousands of dollars to this country. We have not done. In fact we are but beginning to *realize*. In the great collections of WILDER, HOVEY, WALKER, CABOT, and other great cultivators, there are more *Beurre d'Anjous* and *Doyenne Boussocks*. Look at the list of those that "promise well," which Col. WILDER has given us, from his own experience, in the last and present numbers of the *Horticulturist*, and say whether it would be well to relax our efforts, or cry down such a commendable spirit of enterprize. No! no! Encourage it, rather; but, *let all who wish to tread on firm footing, cultivate only well proved sorts*, and the long catalogues will do them no harm. The wheat has already been sifted from the chaff to such an extent as to form a pretty reliable guide. We trust that neither our words nor our motives will be misunderstood. We are of those who believe we have not attained perfection; we go for *progress*.

The *Van Assche* pear, it will be seen by reference to the transactions of the "American Pomogical Society," is classed with "New varieties which promise well." It was

* See Frontispiece.

put there, we think, at the suggestion of Mr. HOVEY or some gentleman from Boston, and we can say from our own experience that it well deserves the position assigned it. It is a very large and beautiful fruit, as our plate, which is a very faithful representation, shows. In quality it is "*very good*"; perhaps not as high flavored as the *Beurre d'Anjou*, but quite equal, as far as we have been able to judge, to the *Beurre Diel*, or *Flemish Beauty*. The tree is a vigorous, erect grower, and an abundant and early bearer, succeeding well on the quince. We have not yet fruited it on the pear. It is inserted in the catalogue of the transactions as "*Van Assene*," but we have followed the Belgian catalogues of VAN HOUTTE, BAVAY, and others, who ought to be correct, as it is one of BOUVIER'S varieties. JAMIN, of Paris, has it "*Vanaesse*," and LE ROY'S catalogue "*Van Asshe*." Our description, taken with the fruit before us, is as follows:



VAN ASSCHE PEAR.

Size—large; three inches in diameter and the same in height. Form—obovate, obtuse, or flattened at both ends, largest near the eye; slightly ribbed occasionally. Stalk—one and a half inches long, rather slender, and slightly sunk. Calyx—small, in a wide, smooth, and rather shallow basin. Skin—smooth and fair; light yellow in the shade, sprinkled with dark dots; light red on the sunny side, sprinkled with carmine dots. Flesh—white, buttery, and melting. Flavor—somewhat of the *White Doyenne*. Tree—vigorous, erect; shoots dark. Season—at Rochester, latter end of September and beginning of October.

DECIDUOUS LAWN TREES.

Our correspondent, Col. Jacques, whose communication appears on another page, asks: "What are the twelve best deciduous trees for lawns and streets, in our cold climates?" We thought it necessary to draw a line of distinction between lawn and street trees, and gave in our last number a brief sketch of the leading characters of what we regard as the best street trees. We now propose to offer, in answer to the question, a few remarks on *lawn* trees.

In landscape gardening, a lawn is a smoothly dressed and finished grass surface attached more immediately to the dwelling. In every style of gardening it is intended, in all its aspects and features, to represent the *beautiful*. A lawn—a smooth, soft, verdant, "velvet lawn," as it is expressively styled—is itself one of the most forcible illustrations of the *beautiful;* and its appropriate embellishments, whether they be trees, shrubs, plants, or objects of art, should all be characterized by symmetry, grace, and beauty. The rough and rugged, which in the landscape express the picturesque, do not belong to the lawn, unless under peculiar circumstances. This principle must not be lost sight of in selecting trees.

Again, lawns are of various dimensions, from the few square rods of the cottage garden to that of the country residence, embracing several acres. This is another important consideration; for *fitness* is a principle that lies at the very foundation of judicious planting, in all places and under every circumstance. A lofty, wide spreading, magnificent elm, would be an object of beauty on grounds of a corresponding amplitude; but place it on a limited lawn, and its beauty would be destroyed by the impression of unfitness which it would at first sight convey. *Variety*, too, is an object that should be aimed at in planting lawns, as far as may be consistent with good taste; and this compels us to consider the dimensions of trees.

There is also another consideration that should not be forgotten in selecting lawn trees, and especially those to be planted in more immediate contact with the dwelling, or in such a position as to strike the eye in connection with it. We shall only allude to this at present. It is very well understood that certain forms of trees make better contrasts, or are more in harmony with certain styles of architecture, than others. Thus, it is very generally acknowledged that Grecian and Italian houses, or houses in such styles as are characterized by horizontal lines, are relieved and exhibited to the best advantage by spiry-topped trees, like the Lombardy poplar, the larch, the balsam fir, Norway spruce, hemlock, &c.; while those of the Gothic character, with pointed roofs, abounding in vertical lines, small ornaments, lightness, &c., are best shown in contrast with trees of the round-headed, massive character, such as horse chestnuts, lindens, maples, oaks, elms, the tulip tree, &c. This is a consideration of some importance, too often entirely overlooked. The man who takes pains to adopt a particular style of architecture, for its intrinsic value or its appropriateness to locality, should be very careful in planting such trees around it, and in so arranging them as not to destroy, but rather to bring out fully and boldly, the particular expression of his style,

whatever it may be. Everywhere we look we see blunders committed on this very point, either through ignorance or negligence. But we shall return to it soon, and draw attention to it more in detail.

We spoke of the *American Weeping Elm*, *English Elm*, *Scotch* or *Wych Elm*, *Horse Chestnut*, *Sugar Maple*, *Silver Maple*, *Red Maple*, *Norway Maple*, *European* and *American Linden*, and *American White Ash*, as street trees, and all these possess sufficient symmetry of form and beauty of foliage or flowers to give them admission to the lawn; but they are all trees of large size, and require considerable space to enable them to make an ample development on all sides, as they should do on the lawn. They are therefore adapted only to extensive grounds. With trees of this class we may include the *American Chestnut*, some of the *Oaks*, the *Beech*, the *Tulip Tree*, the *Magnolia acuminata* or "cucumber tree."

Then among trees somewhat rare, or less generally planted, is the *Japan Sophora*,* (Sophora Japonica,) a large, round-headed, or compact tree, with pinnate leaves and clusters of dull white or cream-colored papilionaceous flowers, bearing considerable resemblance to the *Robinia*, or locust tree. It is remarkable for the deep dark green of its foliage, and for retaining this in the warmest and dryest seasons, and until quite late. In winter, too, it is as remarkable for the greenness of its bark as the *Cornus sanguinea* is for its brilliant red. It is strange that this tree has not attracted more attention. It may not prove quite hardy in all parts of the country, but it is so at Rochester, where the thermometer annually falls below zero 4 or 5 deg., and occasionally 10 deg., as last winter. It grows somewhat slowly at first, until well established, when it makes fair progress on good ground. It was first introduced into France, from Japan, in 1747. There is a weeping variety, which is one of the most remarkable and beautiful of all pendulous trees. The common sort is propagated by seeds, or by cuttings of the roots; and the weeping one is grafted on it, generally at six to ten feet from the ground.

The *Virgilia lutea*, or Yellow Wood, is a beautiful native tree, abounding in some parts of the western States, and especially Tennessee. It is of the same character in foliage and flowers as the Sophora, and indeed the elder MICHAUX was of the opinion that it belonged to the same genus. It is successfully grafted on that tree, and this affords a strong proof of affinity. The leaves are pinnate, considerably larger than the Robinia or Sophora, and the flowers are white, produced in pendulous clusters. We hope to see it more extensively propagated and planted.

The *Salisburia adiantifolia*, or Ginko, or Maiden Hair tree, of Japan, is a singular and beautiful tree, well worthy of attention, and fit to occupy a prominent situation on a lawn. It has curious wedge-shaped, smooth, shining leaves, and makes a lofty and somewhat conical tree. It is dicœcious, and very few specimens even in Europe have produced seeds; most of the plants sold and disseminated have been raised from cuttings. It is yet rare and scarce everywhere. Cuttings of the ripe wood are easily struck, and of the young wood with leaves on, placed under a bell glass, still easier. It may also be propagated from layers.

The *Kentucky Coffee Tree*, (Gymnocladus canadensis,) is another large and hand-

* See Frontispiece.

some indigenous tree, erect, regular and somewhat conical in its growth, with long pinnate foliage, approaching the ailantus in this character. Flowers white, in small spikes. Seeds produced in large pods, like those of the honey locust. The shoots are remarkably blunt, and have a singular appearance in winter. We remember having observed some good specimens in the streets in Newburgh a short time ago. This tree is easily propagated from seeds, which ripen well in all parts of the country. Of the smaller class of deciduous lawn trees we shall speak hereafter.

NEW PEARS THAT PROMISE WELL.*

BY HON. MARSHALL P. WILDER, BOSTON.

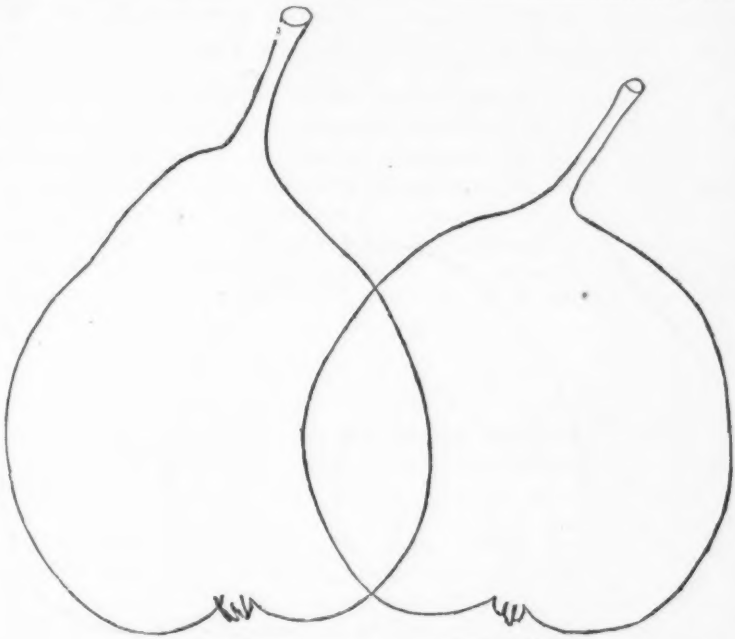
Rousselet Double, Esperen.—Form—globular or obovate, acute pyriform. Size—above medium. Stem—long, curved, rather stout, fleshy at the base. Calyx—open; sunk in a deep, furrowed basin. Color—dull yellowish green, thickly covered with cinnamon russet. Flesh—white, melting, juicy. Flavor—vinous, sprightly, with pleasant aroma. Season—middle of October.—Promises to be classed as "*very good.*"

ROUSSELET DOUBLE, ESPEREN

Beurre Superfin.—Size—medium to large. Form—obovate, acute pyriform. Calyx—closed, small, deeply sunk. Stem—rather short and stout, fleshy at the base, set without depression. Color—yellowish green, somewhat russetted, and occasionally with brownish red cheek. Flesh—very melting and juicy, with a rich, agreeable, sub-acid flavor. Season—middle of October to 1st November. Class—"*very good.*" Promises to be a valuable acquisition.

Bergamotte d' Esperen.—Size—medium. Form—roundish. Calyx—closed,

* Continued from January number.



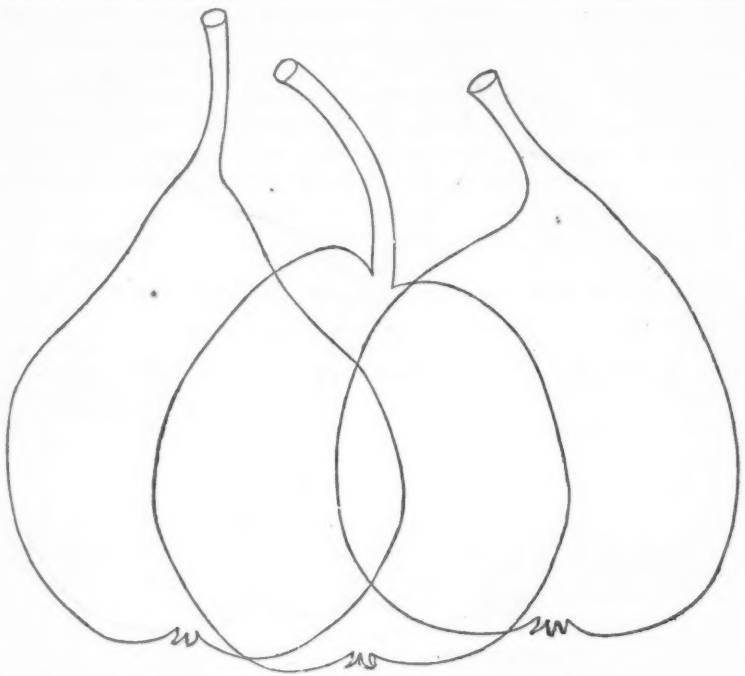
BEURRE SUPERFIN. BERGAMOTTE D' ESPERIN.

sunk in a moderately deep, coarsely furrowed basin. Color—dull green, coarsely dotted, with some russet patches, and occasionally with brownish red cheek. Flesh—fine grained, buttery, melting, and juicy. Flavor—very sweet and rich. Excellent. Season—December to February. Class—"*very good*"—may prove "*best.*" Very productive. Bears in clusters.

Rosabirne.—Size—medium. Form—obovate, acute pyriform, angular; surface uneven and knobby. Stem—about one inch long, fleshy at the base. Color—dull greenish yellow, almost entirely overspread with russet. Flesh—white, melting, and juicy, with a delicious, brisk, sub-acid flavor. Season—middle of October to 1st of November. Class—"*very good*"—promises to be classed as one of the "*best.*"

Baronne de Mello.—Size—medium. Form—obovate, acute pyriform. Stem—short, stout, fleshy at the base. Color—yellowish russet. Flesh—greenish white, melting and juicy, with an agreeable, tolerably rich, sub-acid flavor. Season—October 15th. Will probably class as "*very good.*" A strong grower on the quince, producing abundantly.

Bergamotte Gaudry.—Size—medium. Form—roundish. Stem—long. Color yellowish green, covered with coarse russet dots. Flesh—white, tender, very juicy. Flavor—mild, pleasant sub-acid. Season—middle of November. Class—"*good*"—



ROSABIRNE. BERGAMOTTE GAUDRY. BARONNE DE MELLO.

may prove "*very good.*" Exceedingly productive either on the pear or quince stock. Fruit borne in clusters.

The foregoing article has been already extended beyond my intention. I will therefore close it by referring briefly to some other varieties of recent introduction which give promise of being worthy of cultivation. Among these may be named—

Beurre Navez.—A pear of full medium size, ripening in October.

Supreme de Quimper—A handsome variety. At maturity about middle of Aug.

Van de Weyer-Bates.—Rather below medium size. October 1st to 15th. Very productive.

Josephine de Malines.—Medium size. A rich, delicious sort. Ripens from December to February. Keeps well.

Beurre Bennert.—Below medium size. November to December. Bears in clusters, abundantly.

Catinka.—Medium size. October to November.

Comtesse d'Alost.—October to November. Resembling in form the *Figue.*

Gedeon Paridant.—Resembles in form and flavor *Gansel's Bergamot.* Ripe in October. Princess Charlotte, Paul Thielens, Mary Anne de Nancy, etc.

ON THE EXCRETION OF PLANTS.

BY THOMAS MEEHAN, GARDENER TO CALEB COPE, PHILADELPHIA.

EVERY person connected with the cultivation of the soil is aware that soils wear out, or become exhausted, by being constantly cropped with one kind of plant. It has been supposed by many, that the soil under such circumstances becomes impoverished by the plants. Others, again, conclude that it is poisoned by excrements thrown off by the roots. I propose to examine the arguments advanced by the latter, not with the object of showing that the soil may not be deteriorated by the excrements alluded to, but that they have hitherto failed to prove even the probability of the hypothesis.

It seems to be admitted that plants excrete indigestible matter from their roots. "The roots not only absorb fluid from the soil, but they return a portion of their peculiar secretions back again into it, as has been found by BRUGMANS, who ascertained that some plants exude an acid fluid from their spongioles; and also by Mr. MACARE, who has proved that to excrete superabundant matter from the roots, is a general property of the vegetable kingdom."—(*Lindley, In. Bot., Book, II, Chap.* 2.) "If we place a growing bulb in a vessel of water, but do not change the water, in a few days a slimy substance appears in the water, evidently an excretion from the roots."—(*Horticulturist, Vol. VII, p.* 507.) "If you place a succory in water, it will be found that the roots will by degrees render the water bitter, as if opium had been mixed with it; a spurge will render it acrid; and a leguminous plant mucilaginous. And if you poison one half of the roots of any plant, the other half will throw the poison off again from the system."—(*Theory of Horticulture, par.* 40.) "An apple orchard will not immediately succeed upon the site of an old orchard of the same kind of fruit. No amout of manuring will enable it to succeed. Dahlias do not 'like' the soil in which dahlias grew last year."—(*Ibid., p.* 284.)

All the extracts, except the last, show that plants do excrete from the roots certain substances. The last extract is one of many observations which have been recorded to show that successive cropping *deteriorates* soil. That there is some change in it, is undoubted; but that it is caused by their excrements, is *assumed*. We know that each individual plant absorbs from the soil peculiar elements; or, at least, peculiar proportions of various elements. This has been proved by chemical analysis. Have the excrements of any given plant been subjected to the same ordeal, and the nature of the assumed poison been detected? Would it prove to be arsenic, opium, or any of the metallic or alkaline poisons that are known to be as destructive to vegetable as to animal life? Whether with the idea of showing the injurious effects of excrementitious matter or not, such an analysis would be highly interesting to those who cultivate the soil. The idea that it injures the soil, seems to originate from the apparent impossibility of a plant taking up again what it has once thrown off. But has it been proved that the matter thus thrown off must necessarily remain unaltered in the soil, and may not be immediately changed, by conjunction or chemical affinity with

other substances, to matter useful to the growth and existence of the plant? It has been inferred by a correspondent of the *Horticulturist*, in the page quoted above, that many of the deaths which are supposed to result from "sour soil" and "overwatering," are rather caused by an accumulation of excrementitious discharges. Has there been anything discovered by which to prove that this "sourness" is not what most gardeners take it to be—the result of an acid? I, and no doubt the majority of my practical brethren, have frequently observed that the greater the amount of organic matter in soil, the easier does it "sour." We are particularly anxious to avoid the use of leaf mold in any other state than "well-rotted," on that account. An abundance of water is favorable to the decomposition of organic matter; and "soils contain a peculiar acid analogous to humic acid, produced during the decay of vegetable matter, which is hurtful to the growth of plants."—(*Solly. Rur. Chem., par.* 313.) LINDLEY himself, one of the advocates of the excrementitious doctrine, suggests that "the subject has hitherto been so little investigated, that it is not safe, perhaps, to take it as the basis of a theory."—(*Theory of Horticulture.*) And since his time, HENFREY, the most searching of modern physiologists, considers the theory as "entirely without foundation."—(*Henfrey's Outlines of Veg. Phys.* I quote from memory.)

Although there seems, then, to be no evidence that the excrements of plants have the injurious effects on the soil they are charged with, the discussion of the subject has been productive of good. It has caused attention to be called to the nature of impoverished soils, and its causes, which must in the end produce knowledge which will be of undoubted interest to the cultivator of the soil.

[The question regarding the excretions of plants stands at the present moment as unsettled and debateable as ever. DUHAMEL, we believe, was the first to call attention to it, being led to suspect excretions on account of the earth adhering to the young roots, or spongioles of plants. BRUGMANS, DECANDOLLE, and others, took it up and collected a large number of facts (familiar to readers on this subject) bearing upon the point and furnishing a sort of circumstantial evidence in favor of such a theory. MACAIRE PRINSEP, at the suggestion of DECANDOLLE, made a series of experiments to test it, by growing a great variety of plants in phials of pure water; and the results were such as gave additional strength to the excretive doctrine, at the time. But practical men were not satisfied with experiments conducted upon plants in such unnatural conditions, and other experiments of a more reliable nature, subsequently conducted by some German phytologists, produced entirely opposite results. The theory, therefore, has never been fully established, although we believe that a majority of those who have given the subject attention regard it with a greater or less degree of favor. For our own part, we do not wholly discard the doctrine. We almost daily meet with cases in practice that persuade us that at least it is not unreasonable. In turning up the soil in which certain plants have grown—the cabbage and turnip tribe, for instance—we find peculiar odors escape. So in potting or shifting house-plants, we find that different plants impregnate with different odors the soil in which they have grown. This may or may not be due to the process of excretion.

We do not, however, believe that this process is such, in any case, as to unfit the soil to reproduce the plants which grew in it. The fact, with which we all are familiar, of the failure of successive crops of any given tree or plant in the same soil, is unquestionably due, in the main, to an exhaustion of the soil, or its loss of the elements essential to the growth and perfection of such trees or plants. Our American agriculture exhibits thousands of instances where, owing to the extraordinary fertility of the land, twenty successive crops of corn have been grown in the greatest perfection, without any renewal of the soil by deep tillage or the addition of manures. In other soils two such crops could scarcely be taken in succession. So in regard to other crops. In the case of nursery trees, we have known instances where a single crop of apple trees of four or five years growth so exhausted the soil, that a succeeding one of the same trees was a perfect failure, notwithstanding the most liberal culture.

Rotation of crops is an established principle in field, garden, and nursery culture; and this, not because plants excrete matters unfavorable to their growth, or favorable to the growth of a different class of plants; but chiefly, as we have already said, because they exhaust the soil of certain elements which are necessary and indispensable to their particular structure, composition, and mode of growth. Excretion to some extent is, however, possible and even probable.

The question is full of interest, not only in a scientific point of view, but as having a direct bearing upon one of the most important branches of culture — *the nutrition of plants.*—Ed.]

TREATMENT OF WOODS.

BY WM. H. SCOTT, ADRIAN, MICH.

No branch of agricultural industry is of greater importance than the forest in all its appliances. In most of the States the question now is not how the woodlands shall be most speedily cleared of the trees, but by what management shall the necessary calls for wood in its different uses be most economically answered, with the smallest inroad upon the standing timber? Even in our new States a good "wood lot" is often considered the most valuable on the farm.

Two questions are involved in the preservation of these forests: How may the uses of building material and fuel be economized? How far may the products of the forest be increased, and improved in quality, by proper management?

With the greatly improved modes of generating heat for domestic and manufacturing uses, not more than half the amount of fuel is required now that was consumed ten years ago. Iron and glass are displacing wood for the frames and finishings of buildings, water craft, carriages, furniture, and many other branches of art. Iron and glass are fast gaining ground where strength is more needed than bulk, and where durability is an important consideration.

I do not now wish to discuss the economies of wood after it has been taken from the forest. How much and what quality of wood may be taken from woodland, con-

sistent with the least deterioration of the permanent value of the forest, is a question that more immediately concerns the land owner. The oak is the most valuable of all our woods. It is the most generally diffused, and it is put to the greatest number of good uses. It is well known that the most valuable timber is that which has attained its growth with most light and air. The wagon-maker takes care to combine toughness and durability, by selecting his wood from trees of "second growth," or from trees of first growth that from infancy have stood alone or far apart. Acting on this hint, we would cull out first such of the oaks as are unsound, giving those that are left more light and air. It is a fact in vegetable physiology, that motion facilitates circulation, and that young trees confined to stakes do not form their bodies so rapidly as when left to the moving influences of the breeze. The thinning should be carefully effected too; for the sudden exposure of the body of a tree to the light, after it has been shielded for centuries from the rays of the sun, is frequently fatal to it. The growth of a tree that has always been closely hemmed in, and guarded by its fellows, has a form so different from one of the same species that has sprung up and come to maturity in the open ground, that the identity would scarcely be recognized. Thus, the black walnut in the forest is a tall, naked shaft, with often but a few short branches at its top; while in the open field it grows low, round, and spreading. I have often recommended the whitewood for the avenue, or as a very fit tree for private grounds, and have almost as often been asked if that tall, naked tree, out of which so much lumber is made, could be beautiful. Here let me say that the very general ignorance which exists of the difference in the beauty of pent up forest trees and those that have had full exposure, is the great reason why ornamental trees for transplanting are so seldom chosen from many of the more common forest varieties. How often does the woodman's axe itch for contact with the tall, naked column of the white ash, whose tempting softness is destined to be unfelt until he shall have disposed of some harder but less valuable tree. As a lawn tree, that white ash becomes short and round, close and symmetrical.

The experiments of hundreds, in attempts to develop the sylvan beauties of wildwood, have failed from sudden and indiscriminate thinning. I have seen the fruits of it on my own ground. A narrow belt of forest, composed of oak, linden, hickory, and elm, was left a few years ago on the front of a sloping field. Noble old oaks some of them were while standing in the thick forest. I have hoped that exposure to the light would force them to throw out branches from their naked bodies, and that some of these days a pretty grove would be the result, as many more sound trees of a younger growth were left as body guards to shield their stems. These younger have done their duty well; but the old ones struggle on from year to year, and refuse to be comforted by the youthful family around them. Some of them have thrown out a few weakly branches, but as many more look as if beginning to decay. I shall, after all, look to the second growth for my permanent and most beautiful shades. The difficulty in my case was that the wood was too suddenly thinned. Two-thirds of the large trees had been cut out of the belt nearly at once, judging from the appearance of the stumps, and *all* the trees on either side.

Owners of wood lots do not attach sufficient importance to their nut-bearing trees. It will not be very many years before the hickory, black walnut, and chestnut, will have become so scarce as to possess a value, for the fruit they might produce, quite exceeding that of most orchard trees. But a small portion of the hickory trees in forests where this is the prevailing tree, bear well, if at all. The good bearers should be saved and cherished. There is so much difference, too, in the quality of the nuts — nearly as much as in the fruit of a seedling apple orchard — that great care should be taken in selecting the trees to be spared the axe. Some claim to be able to judge of the character of the nut by the number of leaflets in a leaf. I do not know how far this test may be relied on.

In forest labor there is quite too little attention paid to the fact that some trees are impatient of removal, and that such should be cherished on their natal soil. The hickory, for instance, is very difficult to transplant. Indeed, I do not recollect ever to have seen one, of the common size for street planting, live long after removal. We should act upon the hint, and encourage it to give us the greatest possible beauty in the place where it germinated. Few of our western farmers realize that they have been guilty of any great barbarity, when they have "cleared" their last field without having left a hickory upon the farm. With this tree, utility and beauty go so hand in hand, that such wanton destruction is quite inexcusable. For beauty and thrift, there are few round-headed trees equalling the hickory.

Thorough draining will much improve a forest, not only in the increased growth of the trees, but in the greater comfort of getting about in it. All, or nearly all woods are closer and firmer on a dry than on a wet soil. Often the vegetable matter that forest ditches afford would pay very well for the trouble of cutting them; and it will generally be found that these drains will effect quite as favorable a change in the forest crop as in the field crop, though their influence would not be perceived so immediately.

It is becoming an object in the older States to *make* forests for timber. On sandy soils, and such as compose the western prairies, the locust grows so rapidly that it soon arrives at a size profitable for many uses. On a moderately rich, sandy soil, the yellow or seed locust, if not sown too thick, is large enough at eight years old to make good fence posts, and would do very well for the rails of a "post and rail" fence. The sprouting propensity of this tree precludes all necessity of replanting. The character of the locust for durability is such that, if possible to get, it would be very generally used for railroad ties. A prairie or New England farmer could hardly make a surer provision for his children, than to make a locust plantation of a portion of the land he holds in reserve for them.

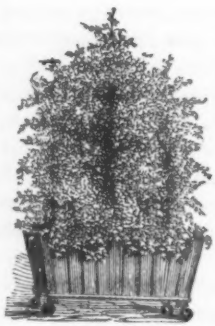
Now, Mr. Editor, these thoughts are intended more as suggestive of a great deal that should be said on forest culture, than for any intrinsic value of their own; and I hope they may be the means of calling out more familiar pens.

[Our correspondent truly says that "no branch of agricultural industry is of greater importance than forest management." We heartily thank him for bringing forward

the subject, and trust he will follow it up. It pains every man who appreciates the importance of our forests, their influence upon climate and upon the landscape, and their various uses to our domestic arts, to see the thoughtless havoc that is constantly made upon them. Year after year the unsparing axe is sent upon its "clearing" missions, and the beautiful pieces of woodland that remain are falling before it as a brave army before a ruthless and invincible foe. We rejoice that in Western New York coal is rapidly taking the place of wood as fuel. So it will be in other sections, now that the coal regions are becoming every year more and more accessible by means of the various railroads in process of construction. When this heavy drain upon the forests ceases, they will be appropriated to nobler purposes, and will become much more interesting to their proprietors.—Ed.]

THE IVY—AN INVALUABLE PARLOR PLANT.

BY J. J. SMITH, PHILADELPHIA.



GIANT IVY.

One of the most beautiful plants for a drawing-room, parlor, library, or dining-room, is the Giant Ivy. In Germany, and particularly at Berlin, it is treated as a window plant, where it serves for a curtain or screen. As it bears perfectly furnace or even stove heat, provided it is not exposod to the immediate action of the fire or flue; and as it is always of the deepest green, and grows rapidly during the winter; we consider it a valuable piece of information to impart to our readers, that they may have at least one plant that will succeed in living rooms. It should have abundance of water, though never so much that the roots will be regularly covered over with the liquid. The box and mode of planting, it will be well to attend to. Our drawing represents one about six feet high by two and a half feet broad, in the parlor of a friend, which is one dense mass of dark green foliage, except the points in growth; these are of a delicate pea color. The whole appearance at a front window, either from an inside or outside view, is rich and spring-like. There is another advantage possessed by this plant as an in-door ornament; if the windows of the room happen to be raised by Molly when she sweeps, in frosty weather, the Ivy is so hardy a plant as not to be absolutely killed in a few moments, as would be the case with the wax plant, and many others. In short, the Ivy is the best house-plant we have ever seen.

In the present instance, a box lined with tin, in which books were received from London, was used; four rollers being inserted at the corners, to make it easily movable. To prevent its having too great weight, blocks of charcoal, covered over with leaf mold, were placed in the bottom. This also gave a suitable foundation, in which the roots delight. In one corner a small strip was nailed, making a well, into which

a stick could be thrust to ascertain how much water had accumulated; and rarely the box is turned on its side to discharge any surplus. This box externally is covered with strips of oak bark; a longer piece being used in the middle of the ends and sides, to represent handles. This is all very simple and easy in practice, and once obtained will last for a long series of years, being moved into a shady spot in summer, and brought in-doors at early frost.

Two or three winters nursing will bring the plant to the size we have mentioned; and if a little care is exercised to train it on one side of the trellis, it can be at any time cut from its strings, and a larger trellis supplied, as its size increases. The supports may be of oak, cut thin, interspersed with bamboo cross-pieces. In time it may require shifting to a larger case; and will then, if you do not choose to trim it to suit your window or corner, form a large screen in a drawing-room, sufficiently dense to divide conversation parties from each other; or several of them placed around the walls of a room used for dancing, &c., would form elegant ornaments. They would always impart a warm and summerish hue, and should thus be trained for every conservatory, as a back-ground or terminating view. No person of taste ever sees our friend's fine specimen, without expressing a wish to possess just such another.

The soil suited to this plant is a mixture of good garden mold and thoroughly decayed leaves. Properly planted in this, the rapidity of the growth of the Giant Ivy will be very satisfactory, whether in a parlor box, or against a wall or tree. We should, however, remark that it will be best to take a well rooted plant from a pot; the ivy requiring a year at least to obtain a firm foundation in the earth, after which there is scarcely any limit to its progress.

The Giant Ivy has not been generally introduced in America; but every one who has *coached* through Ireland will retain vivid recollections of its effects on the eye. In our opinion it is one of the great points in the scenery, and helps materially to give that beautiful island its designation of "Green isle of the ocean." We should be glad to see it much more generally introduced around our mansions. Even in cities a single ivy plant in a small garden, running over and clinging to an old tree or the walls, is a perpetual enjoyment. Where no old tree exists, you can easily bring to the spot most seen from the window a stump ten or twenty feet high, and plant it for the purpose; or employ a trellis, taking care in the latter case to tie up the new growth regularly. The ivy succeeds best in the open air when planted on the north or northeast side of what it is intended to cover. If you have a coppice or a piece of woods accessible to your country mansion, plant a few roots near the trees every spring. They will sometimes run among the leaves on the ground, making a superb appearance, and ever and anon will catch hold of the bark and run "high in air," when you can but remark with admiration the different size and appearance of the beautiful foliage; that on the ground will be smaller and of a different hue from that which has got up into, and rejoices in, more light and air. Sometimes, and in some seasons of drouth and extreme cold, you may be unsuccessful; and hence the hint is given to persevere in successive spring plantings. You may as well recollect, too, that ivy persists in not clinging to plastered walls. In some cases it may be coaxed

to do so by nailing to the wall, directly under the youngest tendrils, a strip of an old cloth coat. To this the ivy attaches itself, and having a *firm hold*, it will sometimes continue to cling where otherwise it would entirely refuse its courted efforts.

To all who are not too far north to employ this beautiful vine — the most beautiful we have, when its endurance and age, with its exquisite green at all seasons, in doors or out, is considered — we say plant the Giant or Irish Ivy; and if too far north for winter exposure, treat it to a box, as we have recommended, and winter it in your living room.

THE CURCULIO.

BY JAMES MATHEWS, COSHOCTON, OHIO.

I KNOW of no one subject connected with fruit culture of more importance to us western people than this. There is no malady or cause existing here that would prevent our having a full crop of that delicious fruit the plum almost every year, were it not for this pestiferous insect. Is it possible that we are to have no remedy? Must we fell all our plum, apricot, and nectarine trees, to prevent the increase of this little wretch to such an extent that he will destroy our other fruits, which is now the case to a considerable degree in many locations? I hope this great calamity may, through the ingenuity and skill of some one, be averted by the timely discovery of a remedy that will cost less than the fruit is worth. The shaking of the trees upon sheets, the only sure means of saving the crop yet discovered, with me takes an amount of labor and time fully equal to the value of the crop; so that its discovery may, as far as my experience goes, be considered of no value or utility to community. To save the majority of the fruit on half a dozen trees in my garden, by this means, requires the labor of a hand one hour and a half every morning and evening for a period of six weeks. At ten hours for a day's work, this would amount to over twelve days; (recollect there are to be no Sundays during this time; if so, your crop is gone;) which, at 75 cents a day, would amount to $9; saying nothing about boarding a hand for two weeks, which would be at least $3 more. The trees upon which I made my experiments will not average over one bushel of fruit each. It will be seen, then, that by this process of preserving the fruit, it would cost about $2 per bushel, which I think is quite as much as it would bring in our market, at least after deducting labor of picking and carrying.

I have tried many of the published experiments beside this, such as chickens, pigs, lime, salt, &c., &c., all of which have entirely failed. Connected, however, with an application of a solution of lime and sulphur to the tops, made with a syringe, during the past season, I made an accidental discovery which I think worthy of note, and which may lead to some beneficial results. I had read communications from several persons who had been successful with the sulphur and lime application. I determined last spring to try it; and as soon as the plums were fairly shaped, and before the curculio commenced his destruction, I prepared the solution, went to work vigorously,

and gave four applications within ten days, on one tree of *Gen. Hand*, one *White Prune*, one *Caledonian*, one *Knight's Green Drying*, one *Royal Hative*, and one *Green Gage*. I covered the tops, leaves and fruit, so completely with the mixture, that at a little distance the trees looked as though they were in one perfect sheet of bloom. For two years previously I had not had a single fruit to ripen on any of these trees. About five days after the first application, I discovered the work of the insect on every tree, all about equally. The depredations increased constantly, although we applied the mixture in greater quantities. After the fourth application I discontinued it, believing that it was doing no good. At this juncture I set my gardener to work at spading up a part of my garden, with directions to spade it deeply and turn the top earth completely under. It happened that he commenced in that part of my lot where one of the plum trees stood, (the *Green Gage*.) The ground under it, and in all that part of the lot, was deeply spaded and well turned under. There was no spading done under or about the others. After three or four days I discovered that the depredators had discontinued their work upon this tree, while on all the others they appeared, from the havoc they made, to work with a double fury, as though maddened at the attempt to foil them by covering their victims with lime and sulphur. On the five trees there was not a single fruit left to ripen. On the *Green Gage* not a plum was incised after the spading, that I could discover. From it was gathered about one bushel of perfect fruit.

That this fruit was saved by turning up the subsoil, or turning under the top soil, I have no doubt; but as to the philosophy of the thing, or the reason of the result produced, I am at a loss. It must have been produced, however, by one of two causes; and I will remark here, by way of introduction to one of them, that by syringing the trees a large quantity of the lime and sulphur solution fell upon the ground, so as to produce an incrustation upon the surface to the full extent of the circumference of the branches of the tree. One is, that the composition, or incrustation on the surface, by the turning under was brought into immediate contact with the spongioles, or feeders of the roots, and thence taken to the fruit; that, when dissolved by the sap of the tree and acids of the fruit, its effects were to produce a flavor or taste loathsome* to the depredator, and thereby prevented his further annoyance. The other is, that during the season in which the curculio inflicts his mischief, he fixes his habitation permanently under the tree, near the surface of the ground, where he remains during his time of rest, and from which he ascends to the top of the tree, either by his legs or wings, at his proper season for labor; and that by the spading he was turned under the ground so deeply that he could not again make his way to the surface.

I shall continue my experiments next season. I shall try the spading alone, and the turning under and sulphur and lime mixture on the surface of the ground in conjunction.

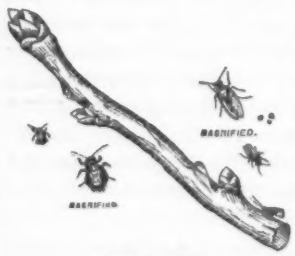
* We very much doubt this, as we have found the most loathsome applications to the fruit of no avail in repelling the insect. We are very happy to record such instances of close and careful observation, and trust that experiments will be continued; but we must say that we have very little confidence in any experiments of such a limited nature, because almost every year we see individual trees escape, as in the case of the *Green Gage* alluded to, from some cause or other unseen.—Ed.

One inquiry, and I will close for the present. What has become of the remedy for the curculio discovered by Wm. Quant, gardener to W. C. Langley, Esq., 3d Avenue, Long Island? (See *Horticulturist, Vol.* 6, *pp.* 583, 584.) He asserted his "conviction that his composition was a radical exterminator;" that he "would keep its nature private until practical men and others [meaning, I suppose, the rest of mankind,] interested were satisfied, after which his receipt should be open to the world." I have waited patiently for its publicity. Should it prove to be what Mr. Quant confidently believed it would, I know of no discovery recently made, connected with pomology, which would be of equal value to this, in many portions of our country. I should be glad to hear what Mr. Quant's success has been during the past season, and whether he has not given sufficient satisfaction of the utility of his application, to justify him in making it public.

LEAF FROM MY JOURNAL.

Psylla Pyri, or Pear Psylla.

I have found this minute and destructive insect on my pear trees as late as the middle of December, the imperfect insect or pupa still busily employed in sucking the sap by means of its rostrum or piercer, (which is situated under the thorax,) and at the same time discharging its excrement, which is the honey-dew, or sweet glutinous substance so plentifully adhering to and disfiguriug the branches at present. Other insects — the aphis, for example — have also the power of producing the honey-dew; but of this we will speak hereafter. Ants are said to be very fond of it, and this may account for the multitudes of these restless and proverbially industrious insects I have often observed running up and down a feeble and diseased pear tree this season. The pupa of the *Psylla pyri* at this time of the year appears to prefer the side of a branch, just above a bud, as its permanent place of residence, as it perhaps finds the sap more abundant there. The head is generally hidden under the bud, leaving merely the black abdomen and wing-cases visible, although they sometimes quit this quiet shelter and promenade on the branch, probably in search of better quarters. When taken from the tree, they crawl very slowly, and their general appearance puts one forcibly in mind of that species of insect which is such a terror to all cleanly housewives, and which generally performs its annual migrations in the city of New York "on or about" the first of May. The pupa of the *Psylla pyri* is very minute, and of a flat shape. The wing-cases and abdomen now are black, but I must here remark that the colors are said to vary in spring and summer. The legs are six in number, and of a yellowish brown color, growing darker or nearly black toward the tarsi or feet, which appear to terminate abruptly and to



PSYLLA PYRI.

have no joints. The eyes are reddish and prominent, like those of the locust, (*Cicada.*) The head is black, with a yellowish red longitudinal stripe. Thorax same, yellowish red, spotted with black. Four first segments of abdomen black, ringed with yellowish red. Extremity or tail broad, black, and fringed with hair. I likewise discovered on the same branch a cluster of very minute, reddish eggs, placed on and underneath a bud, and which probably belong to the *Psylla.* The perfect insect has four wings, which, when folded together, form an angle like the roof of a house. These wings are transparent, veined with black, and with a black spot or mark on the lower side of the upper wings. The under wings are partly edged with black, and have only one black rib near the center. The head (which is divided in the center, and has two projections in front,) and thorax are dark brown, striped and spotted with dirty yellow. Eyes prominent, and reddish. Abdomen black, banded with yellow. Legs yellowish. Antennæ long, and apparently jointed. Tail divided, black, and turned up. The perfect fly generally walks with the greatest gravity and decorum; but on presenting the finger, and when you least expect it, he disappears with a spring like a grasshopper, using his wings at the same time; and it was some little time before I could capture a perfect specimen to sketch from. They likewise appear to be of a very sociable disposition, as groups of twelve or more may be found on the branches, huddled together like sheep, and each one apparently on the best possible terms with his neighbor. After my thermometer had been to 7 deg. Fahr., I found several perfect insects hidden under the rough bark of a pear tree, and which, on being placed in my hand, became "thawed out" and quite lively. The greatest wonder is how the larvæ elaborate honey-dew in such great quantities, as I have seen a drop exuding from the body of one (perhaps the gormandizer of his race) six or eight times as large as the insect itself. Indeed, it was only from the appearance of this dew that I was at first induced to examine a branch. No doubt this constant drainage of sap must impair the vital energy of the tree, and in time would so much weaken it as to impair its fruitfulness, if not altogether kill it.

The insect being found, the next question is how to get rid of it.* Whale oil soap with a little flour of sulphur is excellent for most insects, and I think would answer the purpose here. I have often seen the little chickadee, or black-cap titmouse, clinging to my pear trees, head up or down as the case might be, peering inquisitively into such nooks and corners as the *Psylla* pupæ frequent, and then making a most suspicious dart with his short and sharp bill. I have no doubt that he often swallows a dozen or so as a relish, as we eat oysters, although it would require a great many *Psyllæ* to make even a tolerable lunch for a chickadee.

In regard to birds, with all due deference be it spoken, I am of a very different opinion to the anti-ornithological correspondent of the *Horticulturist*, and will merely mention one fact among the many I have experienced, in corroboration of my opinion. A king bird, or tyrant fly-catcher, having made rather too free with the lives and

* We succeed quite well in destroying the common green and black aphis on trees, with a solution of tobacco. We put some tobacco stems into a barrel—say half fill it—and then fill up with water. After a few days soaking it is fit for use. We keep this very effectual remedy at hand during the whole growing season. It would be very well to add a little whale oil soap. We think this will destroy the *Psylla*, especially if pretty strong.—Ed.

liberties of my bees, (or, as some say, only drones, though this fact has never been proved to my satisfaction,) I shot an unfortunate little phœbe bird, as it was sitting amidst the foliage of the tree the king bird was accustomed to frequent. So much for keeping bad company, I moralized, and immediately proceeded to dissect it, in order to see if I had not done right in shooting it, also hoping to find one bee at least in its stomach, as a sort of salvo to my conscience for committing this foul murder, when to my astonishment and regret I found it completely full of the *Galereuca vittata*, or striped bug, so injurious in this country to the young cucumber and melon plants. I think I need not add that I never shot another, but now encourage all the insectiverous birds to build their nests on my place, by every means in my power; and I really believe that I have already received ample repayment for any little protection I am able to afford them, by the sensible diminution of insects in my garden, not to mention the gratification I receive from the sweet songs of the blue bird, wren, garden warbler, &c., who serve to enliven many a long summer's day from sunrise to sunset. G.—*Fishkill, N. Y.*

CULTURE OF FOREIGN GRAPES IN COLD VINERIES.*

BY H. L. SUYDAM, GENEVA.

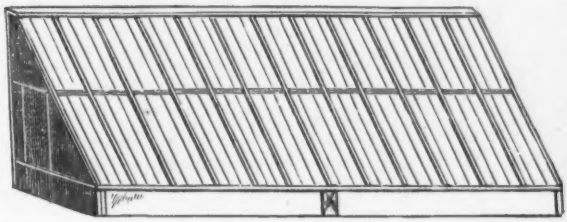
[We commend the following article to the special attention of amateurs, as the plain, straight forward statement of an amateur cultivator who has been eminently successful in this branch of culture. We know Mr. Suydam well, and can vouch for the honesty and accuracy of all he has said in regard to his management or its results. It will be remembered that at our State shows he has carried off the highest prizes even from professional growers. His grapes have always been remarkably well colored, excelling more particularly in this than any other point of merit. The material of the vine border accounts for this in a great measure. Instead of *dead carcasses, offal*, &c., Mr. Suydam has laid a thorough foundation of *bones, charcoal, shells, cinders*, and *well decomposed manure;* and these are the very materials to yield a healthy, firm, well ripened wood, and sound, well colored, and finely flavored grapes. We hope his success will, as he says, "induce others to try."—Ed.]

In compliance with the wishes of very many inquirers, I undertake to give to the public, through your columns, the plan of my vinery, and my mode of cultivating the foreign grape under glass. I will enter upon my duty, then, at once, by saying that I claim nothing new or original in my mode; I have taken some from one and some from another of the very many writers on the grape; and as I have had very good success thus far, I shall feel it a great pleasure if I may but make this statement so simple as to induce others to try the same for themselves.

My vinery has a free open exposure to the south, being what is called a "lean-to"

* From the Geneva Courier.

house, built against the south side of my barn.* It is thirty feet long, twelve feet high on the back wall and one foot in front, an eight-inch timber resting on three brick piers in front for the rafters to rest upon, and fourteen feet wide. The ends are of 1¼-inch stuff matched, put together tight and double, and filled in with tan bark, to keep the house as warm as possible. The door may be in either end, there being no fire used. The sashes are in two lengths, the upper ones to slide easily over the bottom ones, so that the house may be easily aired at any time, and made according to DOWNING. (*Fruits and Fruit Trees of America, p.* 226.)



A LEAN-TO COLD VINERY. SCALE TEN FEET TO AN INCH.

I have a hogshead sunk in one corner of the house, to catch the water from my barn, with a small force pump and hose attached, with which I can sprinkle the house thoroughly in a very short time; for it is of the utmost importance to keep the house moist during the growing season.

The border extends over the whole of the inside of the house, and runs twelve feet outside in front; being thirty feet by twenty-six, and two feet eight inches deep. The dirt is first removed to the depth of two feet eight inches; then filled up eight inches with broken bricks, stones, and lime rubbish, so as to form a thorough drain, (for the roots of the vine delight in a warm, rich, open soil, not too moist;) the soil is then filled in two feet eight inches, to allow for settling.

In the border I am very particular. I have in my border fifty bushels of whole bones, in which there are fifty beeve and sheep sculls; fifty bushels of pulverized charcoal; twenty-five bushels oyster shells; a quantity of leather scrapings; twenty-five bushels of coal and leached ashes; twelve bushels of blacksmith cinders and iron filings; twelve loads of well decomposed manure; and the rest is made up of street scrapings, garden soil, yellow loam, and sod from an old pasture; no dead carcasses being used. The whole is well mixed together, and filled in on the last of March; and the vines are then planted on the *inside* of the house, eight inches from the wall, one under each rafter, which will make the vines about three feet apart. The object is to make the border as loose, open, and rich as possible. Avoid all walking on the border after the vines are planted.

I have ten vines in front and eight on the back wall, of the following varieties, procured of PARSONS & Co., Flushing, L. I.: four *White Muscat of Alexandria*, one *Royal Muscadine*, one *Palestine*, one *Gray Tokay*, one *Black Prince*, one *Black St.*

* We add a sketch of "a lean-to vinery" of the proportions and style described by Mr. SUTDAM, in order to make the subject better understood.—ED.

Peters, one *Zinfindal*, one *Red Frontignan*, one *Wilmot's New Black Hamburgh*, six *Black Hamburgh*.

I plant the vines about the first of April, taking care to spread out the roots, that they may have a free start and not get entangled; rub off all the buds except the strongest one at the bottom. Water the vines freely, if the weather is warm, and keep up a humid atmosphere all the time. Never allow the vines to receive a check after having once started. If it should get too warm, open the house a little at noon, but never let the house be open after four o'clock. If you only leave one bud on the vine, you must take great care of it, as it will rub off very easy, and then your vine is gone. Water with soap suds every Monday — one pailful to a root — and on Friday with guano. Put two quarts of guano in a barrel of water, stir well, and apply at once.

About the 20th of April the buds will begin to push. Let the temperature be pretty high; it will do no harm. I often find my house as warm as 100°, 110°, and 120°, Fahrenheit; but 80° or 90°, with plenty of moisture, is the best. As the buds begin to push out, raise them to a wire trellis about twelve inches from the glass. If any of the other eyes push, rub them off. Give plenty of air in the middle of the day, sprinkle frequently, and keep up a moist atmosphere.

September 1st. Discontinue watering except with the suds. Pinch off the shoot, which by this time will be twelve or thirteen feet long.

December 15th. Cut off the vine about six feet from the bottom, wash it with mild soap suds, wrap with straw, and lay it down in front of the house. Sprinkle some rat destroyer about, cover the border inside and out with ten or twelve inches of manure to keep the frost from the roots, and the work is done for the season, except to examine the glass to see if it leaks, and open occasionally when the sun is too hot, and to see that the mice do not trouble the vines.

Second Year.—Open the house as the season advances, so as to air, and that the buds may not burst too soon. About the first of April, if the season is favorable, uncover the vines, and let them lie down until all the eyes have pushed an inch; raise them by degrees, that they may all swell alike; then fix them to the vine trellis. From the time the house is opened, sprinkle every day, except on damp, cold days, the same as last year.

May 1st. The eyes have now pushed a foot or more. They are now called spurs. Many of them will show fruit. Pinch off all the fruit except one or two, which may be retained to test the kind. Never let more than three clusters remain on the vine the first year of fruiting, and never but one cluster on a spur. Discontinue the syringing of the vine while the fruit is in blow, and keep the house more closed and warm. As soon as the fruit is formed, pinch off the end of each spur about an inch above the first leaf beyond the cluster, and all the other spurs three or four eyes from the vine. Do not allow the spurs to be closer together than eight inches; rub off all that are nearer. As the eyes burst and push out, continue to pinch of the shoot, always an inch above the next eye. This you will have to do six or eight times during the season, to every spur, to keep them in check, or "at home," as it is called,

and that the light may strike the vines on the back wall, (which are not in fruit this season — not doing as well as the front vines, that receive the full force of the light and sun.)

When the fruit has attained the size of a pea, go through the vines with a pair of sharp pointed scissors, and thin out the fruit full one half, always taking the smallest berries; and from time to time go over the vines and thin out the fruit until it begins to color, after which time it will be of no use. This will be about the 5th of August. Up to this time you have watered regularly with the soap-suds and guano, and syringed the vines from one to three times a day, as the weather has admitted. As soon as the fruit begins to color, discontinue the watering, and keep a current of hot dry air passing through the house, that the wood may get thoroughly ripened and prepared to do its duty next season. And if the fruit should turn soft and feel cold, cut it off at once; your vine is overcropped, and if suffered to stay on, will destroy the crop for another season and very much weaken the vine.

About the 20th of June, sprinkle two pounds of the flour of sulphur at mid-day, when the house is hot and dry, that some of the dust may fall on the foliage. This will prevent the mildew. Repeat the same about the 1st of August. By the 15th of August the *Chasselas* grape will be ready to cut. Keep the current of hot air passing through the house. Pinch off the upper end of the vine to stop the growth and throw the sap into the lower part of the vine, and swell the buds.

September 15th. *Black Hamburgh* are now ready to cut. Your *Black Prince* and *Frontignan* will hang on the vine until December, if you keep the house open and cool.

December 15th. Cut the vines back to within two feet of where you did last year, and all the spurs to within an eighth of an inch of the vine. Don't fear for your fruit next season; there will be plenty of buds push from the base of the spur. Wash the vines with a preparation of soap-suds and sulphur — four pounds of sulphur to two quarts of soap-suds, mixed to the consistency of cream; apply with a paint brush, and be sure to touch all the parts. Some add a little tobacco. Cover the vines with straw, and the border with manure, the same as last year.

Third Year. — As the season advances, open the house often when it is warm, to keep the vines back so that the buds will not push too soon. Better not uncover until the 10th of April, than have the buds push and then receive a check. When you do start them, water the house freely and keep up a moist atmosphere, and guard against a check. Uncover the borders, and replace with new or fresh manure from the barnyard, to warm the roots. Examine the drain, to see that all water is carried off readily; for much — yes, one-half of your success depends upon keeping the roots in a proper state; no stagnant water must on any account be allowed to remain at the bottom of the border. Let the vine remain down on the border the same as last year, until the buds have pushed one or two inches; then raise by degrees. Several eyes will push from the base of last year's spurs; rub off all but one, so that the spurs will be about six or eight inches apart on the vine. Always rub or pinch off the spur; never cut. Water regularly the same as last year. As the fruit shows

itself, select six or eight of the finest looking clusters on each vine, and pinch off all the rest at once. Keep the house closed and still during the time the fruit is in blossom, and not touch the vine with water until the fruit has set. As soon as this is completed, pinch off the end of the spur one inch above the next eye from the fruit, and all the others, except the leading shoot at the top, which you of course tie up to a wire trellis.

June 1st, remove all the rough and loose manure from the border, and fork in the remainder. June 10th, mulch the border with tan bark, about two inches thick, to keep the roots in an equal temperature and prevent the sun from operating too powerfully upon them. Care should be taken that there be at no time a sudden change in the house; open by degrees, and close in the same manner. If the leaf turns yellow, examine the glass; there is probably a defective light of glass, which draws the sun and scorches the vines. If the glass is defective, wash it on the inside with a preparation of whiting and boiled oil and turpentine. Never syringe the vines when the sun shines upon them; get up the moisture by keeping the floor wet.

When you prune the old wood of a vine, (which may be done without detriment, or danger of its bleeding, any time after the 1st of July,) use a very sharp pruning knife, and make one smooth, straight cut. The leading ones must be stopped soon after they reach the top of the house; but leave two or three laterals, to keep the sap in motion, which are to be stopped at intervals of two or three days. Pinch off all tendrils, and keep the whole strength of the vine in as small a compass as possible; but never remove the leaves from the vine, or you will destroy the flavor of your fruit. If you require more light, spread out the spur and tie it to the trellis. There should be at least one leaf between the fruit and the sun. Be sure and give plenty of air and room to the clusters, that they may get perfectly ripe, or the flavor will be destroyed. *Black Hamburgh* should be *black*, not red, as is frequently the case, from being kept too close and confined, and not open to the air, as they should be.

In selecting your fruit, care should be taken to have it equally distributed over the vines. This will add very much to the appearance of the house as the fruit progresses.

Tie all the spurs to the trellis as soon as the fruit has set, water regularly, sprinkle with sulphur the same as last year. When the fruit has attained the size of a small pea, commence to thin out, always taking the smallest berries. If you want large berries, you must thin out severely; take two out of five berries; the strength will enter those that are left, and cause these to grow beyond your expectations.

Then commence to shoulder or tie up the clusters, and spread them out so that the air will pass freely through the clusters, and ease the main stem. After the fruit begins to color, avoid all handling. If you touch the fruit, it will destroy its beauty, and cause it to rust. If it is necessary to handle it after this stage, use a glove.

Give the vinery plenty of air, plenty of heat, and plenty of moisture. Remember that large fruit and large clusters are the objects to be attained.

This is the manner in which I have treated my vines for the last three years, and never have had any trouble from rot, rust, insect, shriveling, or shrinking; and in seventeen months from the time the vines were planted, I took the second premium

at the State Fair at Rochester; and this season the first premium at Utica, having raised nine clusters on each vine, and exhibited grapes the weight of which was as follows: *Black Hamburgh*, 2 lbs. 12 oz.; *Zinfindal*, 2 lbs. 14 oz.; *Black St. Peters*, 3 lbs. 2 oz.; and all were ripened by the 5th of September, although the season was backward and unfavorable.

What the vines will do another year, of course remains to be seen. I think, however, they are in good condition, the wood being well ripened; and with proper care, a good crop may be expected.

It will be seen that this statement is plain and to the point; and could I have had these notes to refer to when I commenced, they would have saved me a great deal of trouble. And I think that with these notes, and the help of DOWNING'S work and a work on the grape published by J. F. ALLEN, Boston, Mass., any one may raise the foreign grape without any fear of failure. And certainly, to see the house well in fruit one season, will go a great way toward paying for what some would call trouble.

ON THE CLIMATE, &c., OF THE SOUTH SHORE OF LAKE ERIE.

BY J. P. KIRTLAND, CLEVELAND, OHIO.

[THE following article appeared in the *American Journal of Science and Art*, March, 1852. We reprint it for several reasons:—1st, It furnishes some very instructive and interesting items in relation to the climate and natural history of one of the finest fruit growing and horticultural districts of the west. 2d, It shows the influence of bodies of water upon climate, and gives a full and clear explanation, both scientific and practical, of the nature and operation of this influence. 3d, It is an example of the kind of observation that should be made in every part of the country respecting such local peculiarities of climate, and their causes as affect vegetation.

Astronomical, and other scientific societies go to great expense in making such extended observation as the objects they have in view require, and we know of no way in which horticultural societies could more efficiently promote the advancement of their science than to institute such observations as these in their respective localities.—ED.]

Peculiarities of the Climate, Flora, and Fauna, of the South Shore of Lake Erie, in the vicinity of Cleveland, Ohio.

Very erroneous opinions are entertained, by even intelligent people, respecting this section of country, so far as its climate and the species of the animal and vegetable kingdoms are concerned. A series of observations, embracing a period of ten years, have disclosed some interesting facts upon these points.

The locality where these observations were made, is situated five miles west of Cleveland, half a mile from the lake, one hundred and fifty feet above its surface, and fully exposed to its influence. During the ten years, the temperature has in no

instance fallen below zero; while at Columbus, Marietta and Cincinnati, situated from 120 to 150 miles to the south, it has frequently sunk to 5°, and has occasionally fallen to 10° below, at some of those places. Their latitudes are as follows, to wit:

Point of observation near Cleveland,

North,	41° 31′
Columbus,	39° 57′
Marietta,	39°
Cincinnatti,	39° 5′ 54″

The more tender vegetation is usually cut down in all northern Ohio—a few localities excepted—within five days of the 25th of September. The lake shore is an exception. Dahlias, maize, and sweet potatoes are generally killed simultaneously here and at Cincinnati—never before the 25th of October, and sometimes not until late in November. In one instance, at least, the lake shore escaped two weeks later than did Cincinnati.

At the present moment, October 25th, vegetation is as verdant and thrifty as it has been at any time during autumn, though it was cut down throughout the West generally several weeks since.

The foliage of the fruit and forest trees, having subserved its purposes, is falling without the intervention of frost, and the wood of the more tender trees, such as the peach and cherry, has attained a maturity that will render it sufficiently hardy to withstand the impressions of cold during winter. This occurring annually, gives to those trees a degree of vigor, health, and productiveness, not to be met with in localities where their growth is suddenly arrested by frost, at a period when they are immature.

In the middle and southern sections of Ohio, spring sets in during the month of March—perhaps earlier. The warm winds blowing up the valleys of the Mississippi and Ohio, in conjunction with other causes, bring forth vegetation earlier; but cold weather and disastrous frosts too often follow.

While these changes are progressing in those parts of the State, winter will remain steadfast at this point. Little advancement will be made by spring, so long as any considerable bodies of ice float upon the lake, even as low down as Buffalo. No sooner do they disappear than spring sets in with a reality, and vegetation puts forth with *sub-arctic* rapidity.

The lake rapidly imbibing heat at this season, becomes a safeguard against any subsequent vernal frost. Its influence was manifested in a satisfactory manner, early in the present season. On the 1st of May, spring seemed to be fully established; fruit trees had blossomed, and in some localities young fruits had formed. The morning was cold and the temperature declined during the day and evening. At 2 o'clock P. M., it was 48° Fahrenheit; at 7, 34°; and at 9, 32°. The atmosphere was calm and clear, indicating to an inexperienced observer the approach of a destructive frost. At 10 o'clock P. M., it had risen to 40°; a heavy cloud of haze hung about twenty degrees above the lake and soon overspread the whole horizon. The morning of the following day was warm and misty; by 12 o'clock M., it was clear and spring-like.

Not a fruit-germ was injured on the lake shore. A different state of things occurred throughout the West and South-West, where no local influences interposed. The temperature steadily declined, without intermission, during the day and night, down to about 26°. The day following was cold and blighting, and fruits were generally destroyed.

The modes by which the lake exerts its influence on such occasions, do not appear to be uniformly the same at different times.

On the approach of a cold night, as in the instance above noticed, the warm emanations condensing may give off caloric, and obscure the atmosphere with haze, mist, or clouds, when no frost will occur.

Under circumstances apparently similar, on the approach of a cold night, neither haze, mist, or clouds may form, but a stiff breeze springs up, and the stars become unusually brilliant. The thermometer vacillates between 32° and 38°, rising with the gusts of wind, and falling during the intervals of calm. *Then* no frost will appear.

Again, none of these modifying causes may intervene, but the temperature may fall below freezing point, ice form on the surface of water, and the expanded fruit, leaves and blossoms congeal. Under such circumstances, the first rays of the rising sun the next morning will be arrested by a haze, which will soon thicken, and before noon a warm rain will probably fall. The frost will be abstracted so gradually from frozen vegetation as not to impair its vitality.

These contingencies have all occurred within the period of our observations. The year 1834, proved an exception.—The general cold prevailed over the local warmth of the lake; freezing weather continued two or three days, and fruits were cut off, even on the shore of the lake.

In autumn, this great body of water begins to part with its warmth to the colder incumbent atmosphere, and the process continues during the winter. While its progress is most rapid, strong southerly winds prevail at the earth's surface, while volumes of clouds, at a high elevation, may at the same time be moving rapidly in an opposite direction.

These counter-currents have sometimes given origin to a phenomenon in the city of Cleveland, not well understood by all of its good citizens. The vane of the lofty spire of the Baptist church, standing on a high ridge of ground, may point steadily to the north, while that on the low cupola of the First Presbyterian church, situated on a less elevated plateau, may be directed to an opposite point of the compass, with a stiff southerly breeze at the same time.

Cool north winds begin to prevail about the middle of October. The emanations from the lake then begin to condense and pass off to the south, in the form of thick clouds, without discharging, at first, much rain. About the 20th of October, the cold from the north seems to gain the ascendancy; squalls of rain, hail and rounded snow appear alternately, with intervals of clear and warm weather. These squalls always precede the autumnal frosts. Our gardeners feel no apprehension for their tender vegetables till these premonitions have appeared.

Common observations, as well as the more sure test, the rain-gauge, show that larger amounts of vapor from the lake are carried south, condensed in the form of rain and snow, than fall in this vicinity.

During winter, comparatively little snow falls, and still less accumulates here, though it may be abundant on the higher grounds, thirty or forty miles in the interior.

This region is also not so frequently favored with showers in summer, as the central portion of the State. Long and severe drouths often prevail, but they are in part counteracted by moisture in the atmosphere. This quality sustains vegetation, and also imparts a freshness to the atmosphere during the hottest days of summer, very observable on approaching the lake from the interior. During that season it is peculiarly pleasant and invigorating to invalids, and equally harrassing to them during the spring season.

The indigenous vegetation of this vicinity is of rather a southern type — shown by the absence, in a great measure, of evergreens, and the occurrence of more southern genera, as the Cercis, Ilex, Æsculus, Nelumbium, Gleditschia, Magnolia, &c. Elliott's *Botany of South Carolina and Georgia* has been found to be a convenient hand-book for investigating our flora. On the other hand, strange hyperborean plants are frequently found, which have been washed down from the far Northwest, through the chain of great lakes.

Many of our birds are species whose most northern ranges of migration have been assigned many degrees south of this, by ornithologists. The hooded, Kentucky, yellow-throated-wood, cœrulean, and prairie warblers, annually rear their young in this vicinity. Trail's fly-catcher, and the piping plover, have been repeatedly seen here, and the purple ibis is an occasional visitor. The list might be greatly extended.

Great numbers of the Sylvicolæ semi-annually congregate here, during their migrations, and seem to make it a resting-place, both before and after passing the lake. More northern species occasionally resort here during winter for the purpose of obtaining food, or are driven here by storms; such are the pine-grosbeak, and the white owl. The Bohemian wax-wing visits us almost every winter, and sometimes in large flocks. The pinefinch is described, by some ornithologists, as resorting to the United States only at long intervals, and during winter. It visits our gardens and grounds in numerous flocks every season, early in July, and remains here till the ensuing spring. The young, at their first appearance, still retain much down about their plumage, and cannot have been long absent from their nests. The food of these birds is Aphides during summer, and at other times small seeds of grapes, and other vegetables.

The insect tribes show still more strikingly southern affinities. The *Papilio Cresphontes*, figured and described by Boisduval and Le Conte, as the *Papilio Thoas*, has been repeatedly taken here: though it has been considered as exclusively southern in its resorts. In the South, the larva feeds on the orange and lemon; here, Major Le Conte informs me, it lives on the Hercules-club.

The *Papilio Ajax* and *Papilio Marcellus* have also been described as southern insects; and the late Mr. Doubleday located the former exclusively in Florida, and fixed the most northern limit of the latter in Virginia. Still they are common at this point, and subsist in the larva state, on the pawpaw. An undescribed species of

Libythea has been taken in Northern Ohio; it has been found, also, in South Carolina, and is without doubt legitimately a southern species.*

The *Chærocampa tersa*, an elegant miller, was taken in our garden, in the month of May last. Dr. HARRIS describes it as a native of South Carolina, where it feeds on a species of plant which does not grow at the North.† The food it finds as a substitute has not been ascertained.

COTTAGE GARDENING.

BY WILLIAM WEBSTER, ROCHESTER, N. Y.

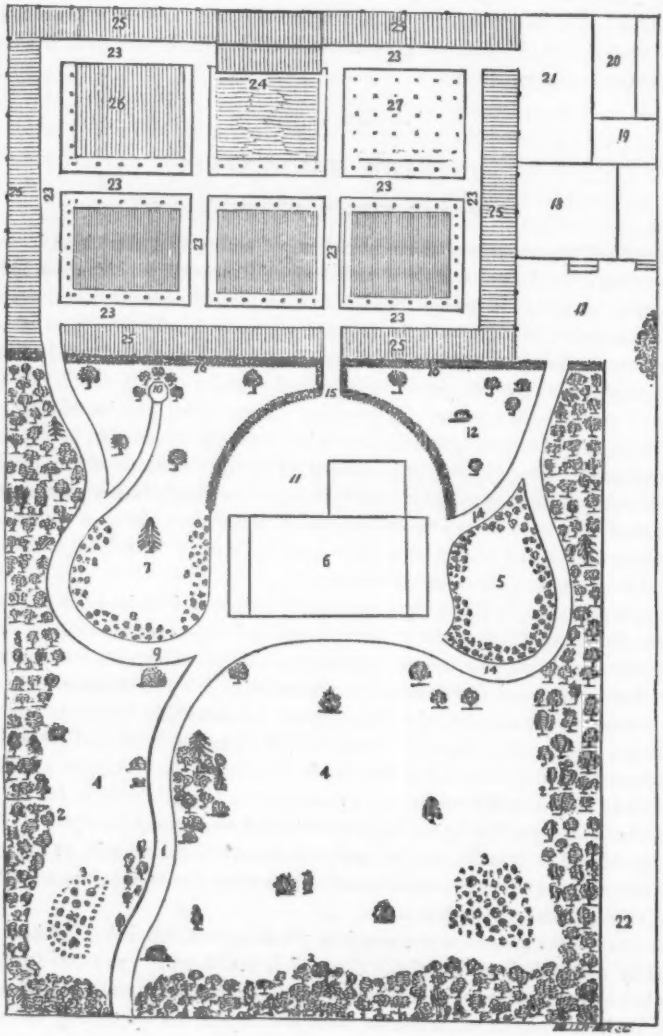
IT can not but appear, to even the most ordinary observer, that there is an increasing and growing interest for that style of architecture in our cottage residences which our late highly valued and lamented friend DOWNING labored so incessantly and effectually to introduce; and that such is the case, we have abundant evidence of in the many chaste and elegant cottages which we see springing up around us; but still, in many instances, we see his plans but imperfectly carried out. I now allude to the formation and embellishment of the grounds; for no matter how beautiful or chaste the dwelling may be, if the grounds are not in keeping, it can at most display but an imperfect taste. Hence my object in offering this design is not to make a display of any elaborate or intricate plan, but merely to show how simply such a place as is here represented may be laid out and still possess all the characteristics of a comfortable and retired home; and when such a place is neatly kept, it can not fail to stamp the proprietor as a man of taste and refinement.

In the working out of this design, my object has been to introduce that form which is most pleasing, and best adapted to the wants and requirements of that class who are possessed of a moderate income, and who, wishing to enjoy all the comforts of a retired home, may be able to do so at a moderate expense. The pleasures and advantages derivable from a garden of this description are manifold. The man who takes delight in gardening, is always stimulated to further exertion by the delight which he experiences in viewing for the first time in his own garden the opening of some choice flower, or in the gradual development of some rare fruit, until finally he has his sense of taste and smell gratified by its delicious taste and fragrance. This plan is capable of being reduced or extended so as to apply equally as well for one acre, or five, or six, as circumstances may require, or in other respects altered as may best suit the convenience of those wishing to adopt it.

The form of the ground in the plan is a parallelogram, this being the form most frequently met with in places of this size, and is 200 feet front and 300 feet deep; and when laid out and planted, will appear much larger than it really is. The alterations or improvements which can be made in this plan, are by making two walks,

* See the figure and description in No. 76 of the *Family Visitor*.

† See Dr. HARRIS's very valuable Catalogue of American Sphinges, in Vol. XXXVI., *American Journal of Science and Arts*. The student of Entomology will there find the history of this intricate family made plain by the labors of Dr. H.



PLAN OF GROUNDS FOR A COUNTRY OR SUBURBAN RESIDENCE, 200 FEET BY 300.

each entering at C, immediately at the right and left of the entrance gate, and continued along the boundary belt until they connect with walks 9 and 14; or, if thought more desirable to have a carriage entrance, by widening the main walk, making it 12 or 14 feet wide: thence conducting it to walk No. 14, which can also be widened, to the stable-yard, which is of sufficient size to turn a carriage in; in this case the lane can be dispensed with, which will extend the lawn. My object in making a main walk instead of a carriage road, is to keep the front part of the lawn from being cut up any more than necessary. Other improvements might also be made, such as the placing of a few rustic seats, rustic flower-baskets, or any other ornament of a similar nature, in different parts of the lawn, such as may best suit the taste of the proprietor.*

The Grape house is an appendage which can scarcely be dispensed with in a place of this description, the utility of which is becoming more and more appreciated. I may have occasion to enter more fully into the details of this at some future time.

The dotted lines on each side of the center walk, represent two rows of dwarf pears, apples and cherries; the dots marked, are the spaces they will occupy,—six to each bed, six feet apart, making in all three dozen. The dots on the fence are for wall trees, or grape vines, two dozen in all, twelve feet apart. The smaller dots around the vegetable beds, are for gooseberries and currants, three dozen in number, four feet apart. The wall trees, or grape vines, should be trained on a trellis, inside the fence, and at such a distance from it that the air may circulate freely between the trees and fence; from four to six inches is a sufficient distance. It will be found more desirable to plant dwarf trees in a small garden of this description, than standards. The trees on the fence occupy but a small space, and will amply repay the cultivator for the extra labor of pruning and training, in the superior quality of the fruit.

I think the Kitchen Garden will also be found amply sufficient for the culinary use of a moderate sized family; if not, it can easily be enlarged by bringing it nearer the house.

I trust, with the explanations here given, and where due discrimination is exercised in the selection of such trees and shrubs as are most suitable for such a place, that the results may prove highly satisfactory.

* The following key to the plan explains the locality of all objects connected therewith:

1. Main walk from highway, and leading to house; seven feet wide.
2. Boundary belt of deciduous trees, evergreens, and shrubs.
3. Irregular beds cut in turf, for shrubs, &c.
4. Lawn, interspersed with trees and shrubs.
5. Patch of grass, with irregular flower beds cut in turf.
6. Dwelling house.
7. Parts of lawn.
8. Irregular flower beds.
9. Walk from dwelling to summer-house and garden.
10. Rustic summer-house.
11. Yard in rear of dwelling.
12. Patch of grass, the dots denoting trees and shrubs.
13. Evergreen screen, enclosing rear of house and back offices.
14. Walk from dwelling to stable yard.
15. Pathway from house to kitchen garden.
16. Evergreen or privet hedge, separating lawn from kitchen garden.
17. Stable yard.
18. Carriage house and stable.
19. Cow house.
20. Poultry house and yard.
21. Yard in rear of stable, and connecting with kitchen garden.
22. Lane leading from highway to stable.
23. Garden walks.
24. Grape house and vine border.
25. Border, ten feet wide, around the kitchen garden.
26. Square for rhubarb, asparagus, and sea kale.
27. Square for raspberries.

Literary and Horticultural Notices.

THE CULTURE OF THE GRAPE, AND WINE MAKING. BY R. BUCHANAN. Cincinnati. Second Edition.

The most complete and reliable publication we have yet seen, on the subject of Vineyard Culture, and Wine Making, in America. It is the fruit of large experience, not only of the author himself, but of many of the most intelligent and observing gentlemen around Cincinnati, who are practically concerned in this culture. We commend it to all who are seeking information on the subject.

From this work we take the following article by Dr. MOSHER, a distinguished horticulturist, and an experienced grape grower:

"VINEYARD CULTURE OF THE GRAPE—SPRING AND SUMMER PRUNING.—As I think much experience and observation are required to arrive at the best methods, I shall give only what has proved most successful with me. My vines, or a portion of them, have been planted nine years; the rows five feet apart, and the vines three feet distant in the rows. Roots, one year old from the cuttings, were planted after being cut close down to the crown. The first year they were allowed to grow without any other care than keeping the ground clear from weeds. The second spring, early, the tops were all cut down to two eyes, and a stake driven to each vine, six or seven feet long. One or two of the best shoots were allowed to grow, all others rubbed off. These two shoots, or canes as they are technically called, are tied up to the stakes when they have grown eighteen or twenty inches in length, and should be kept tied from time to time, as they advance in height through the second summer; little or no pruning will be required this season.

"The third spring, I would cut these canes down to two eyes; although some of the strongest might bear fruit the third summer, it is much better to let them grow another year, and become strong, before raising a crop. This season more attention is required, and they must be prepared to bear a good crop the fourth summer. The two most thrifty shoots must be selected the third spring and kept tied with rye straw, or some other strong and suitable material, to the stakes, as in the second summer. This year I pinch off all the lateral or axillary branches between the thumb and finger-nail before they become too large and woody—otherwise, if left too long, so as to require the knife, the determination of sap in that direction is liable to force out the sleeping eyes, which should remain dormant till next year. These lateral shoots should be pinched off to the height of four or five feet, or as high as is intended to prune the next spring; after that they may be allowed to grow, as they check the extension of the main shoots.

"The two canes of this year will be strong and vigorous and soon rise to the top of the stakes, where they must always be strongly tied to prevent the effects of wind. About the first of September, and not much before, the extremities are pinched off to arrest their further elongation and growth—whereby the wood and buds become more perfectly matured. This finishes the work of the vines for the third season.

"We are now arrived at the fourth spring. The vines are old enough to bear a full crop, and we have two good thrifty canes ready for the knife; the old strings by which they were secured to the stakes are cut, and the tendrils trimmed off. The cane that comes off highest from the root is chosen to bear the whole crop, and is cut off about four feet from the ground, having from six to ten eyes according to the length of the joints; the other cane, which is often equally beau-

tiful, is cut down to two eyes, and is generally used for cuttings. From these two eyes two more shoots are trained, as in the previous year. After all are pruned, and just when the sap begins to flow freely and the vines are most flexible, the bearing cane is carefully bent round in the form of a hoop, and tied to the stake with willow twigs—one at the bottom, one at the top of the circle, and the third fastens the extremity either to the stake or to the vine below.

"I am often asked, why this hoop or circle? The answer is, gradually to retard the current of sap or juice, that each eye may receive an equal share, and prevent its rushing onward to the last eye or bud, which is sure to gain too great a share and to cause a growth too exuberant if trained upward with the stake.

"The operation of tying is performed with much dexterity by experienced hands, and should always be completed before the buds are much expanded, as then they are liable to be broken off.

"All my hopes and expectations of a crop are now centered in this little circle. If the winter has not been too severe every eye will shoot, and in a short time show the blossoms, from one to three bunches on each. After the berries are set, my vines are carefully inspected by the vine-dresser, and from ten to fifteen of the largest and most promising bunches are selected, and all the others are pinched off, also all unfruitful shoots that may have pushed out from the circle. I know that many of our vine men allow every bunch to grow for fear of casualties. This I have proved to be an error. Ten to fifteen bunches, according to the strength of the vine, are more likely to remain on and produce more mature fruit than twenty or more. The vines must not be over-taxed—too heavy a burden can never be carried to the end of the journey—but a light task will be more perfectly executed.

"Soon after the grapes are set and about the size of common shot, my rule is to pinch off the ends of the bearing branches, leaving four good leaves for the first bunch of grapes, and two leaves for every other bunch on the same branch—so that if there are three bunches there will be eight leaves to supply their wants. I have tried leaving these bearing branches to grow their full length without pinching them off, but I find they incumber the ground too much, without any perceptible improvement of the fruit. After these bearing shoots have been pinched off, especially if done too early, the buds in the axils of their leaves will push out. These I pinch off also when quite young, sometimes permitting one or two leaves to remain on them. The leaves on these laterals do not seem to subserve the wants of the fruit, like the original leaves on the bearing wood, which should be carefully preserved. At the fifth spring-pruning the vines will have the two good canes, as in the previous spring, with the addition of the old hoop or circle that bore fruit. This I cut off as close down as possible to the uppermost cane, and the other two canes are managed exactly in the same manner as in the preceding year. I never allow the old stock to rise more than six to ten inches above the ground—the lower they are kept the more healthy they will remain and be much more easily managed. Pruning the vine for wine requires a bold hand and much firmness of purpose, otherwise the old stock will get too high and become incumbered with too many shoots. It must be borne constantly in mind that one single bearing shoot or cane, having from six to ten eyes, will throw out as many bearing branches. From these ten bearing branches it will be easy to select from ten to fifteen bunches. These bunches, in any ordinary favorable season, may be made to yield one quart of good grapes, which will make, at least, a pint of wine. One acre of ground planted three feet by five will contain 2,904 vines. If each vine, then, yields one pint of wine only, there will be 2,904 pints, or 363 gallons, from each acre. This is more than the average yield per acre—and for the reason only that we are too greedy—by overloading the vines we fail to obtain a reasonable quantity, as well as a good quality of wine.

"The above contains most fully my views, derived from practice and close observation, on the subject of pruning the vine for wine. If you think they contain any hints that will aid beginners, or others, you are at liberty to make such use of them as you may think proper."

TRANSACTIONS OF THE NORTH WESTERN FRUIT GROWERS' ASSOCIATION, at their Second Annual Meeting, held at Dixon, Ill., Sept. 29 and 30, 1852.

THIS pamphlet furnishes very gratifying evidence that the Association from which it emanates has fairly entered upon a career of great usefulness. The nurserymen and fruit growers of the west stand in peculiar need of such an organization. They have a soil and climate differing, in most of their important features, from older portions of the country whence their varieties of fruits and systems of culture have been introduced; and every year's experience shows them more and more conclusively that, to be successful, they must have a system of culture as well as a selection of varieties adapted to their own circumstances. To collect any reliable information on these points, an annual consultation, such as this association brings about, is the most effective mode that could be adopted. It brings together the most experienced and observing men, and enables them to compare failures and successes, their systems of management and suggestions for improvement.

The experience so far acquired is so limited, and the views so various and conflicting, tha the proceedings of the two meetings held do not throw much light on Western pomology, or at least do not guide us to any general conclusions of a satisfactory nature, either as regards modes of culture or the success or failure of any considerable number of varieties of fruits. The apple only has been discussed—all the other fruits remaining untouched. The Association, however, has done all that could be expected of it. It has made an excellent beginning; its usefulness is in the future. We look forward to the next meeting in Chicago, on the first Tuesday in October, 1853, with much interest; and if it were not so late in the season, would gladly meet our western friends on that occasion.

The committee appointed at the opening of the meeting (consisting of Dr. L. S. PENNINGTON, CYRUS BRYANT, C. R. OVERMAN, H. S. FINLEY, and A. R. WHITNEY,) to recommend a list of fruits for discussion and for cultivation in the west, reported the following:

EARLY APPLES.—Carolina Red June; Early Pennock; Keswick Codlin, for culinary purposes; Sweet June; Hocking, (local name.)

For limited cultivation.—Prince's Early Harvest; Sweet Bough; American Summer Pearmain

AUTUMN APPLES *recommended for general cultivation.*—Rambo; Maiden's Blush, (market and culinary); Gravenstein; Snow; Porter.

Recommended for further trial in the West.—Autumn Strawberry; Monarch; Fall Pippin, best fruit, but bearing variable; Sweet Nonsuch, (local name); Red Gilliflower.

WINTER APPLES *recommended for general cultivation.*—Yellow Bellflower; Rawles' Janet, in favorable localities; Willow Twig, prolific and profitable; Fallawater, (known as Mountain Pippin); White Winter Pearmain; Dominie; Winesap.

Recommended for limited cultivation.—Belmont; Talman Sweet, as a baking apple; Vandervere.

For further trial.—Detroit Red; Roxbury Russet; Ladies' Sweeting; Baldwin; Rhode Island Greening; Jonathan; Hubbardston Nonsuch; Swaar, (best fruit.)

We shall hereafter refer to the discussions on these varieties. The following is the list of officers for this year:

JOHN A. KENNICOTT, *President.*
ROBERT AVERY, ARTHUR BRYANT, W. H. LOOMIS, *Vice Presidents.*
F. K. PHŒNIX, *Corresponding Secretary.*
SAMUEL EDWARDS, *Recording Secretary.*
ARTHUR BRYANT, *Treasurer.*

A TREATISE ON WESTERN POMOLOGY, by F. R. ELLIOT, of Cleveland, is spoken of in the western papers as soon to make its appearance.

British Pomology; or the History, Description, Classification, and Synonyms, of the Fruits and Fruit Trees of Great Britain. By Robert Hogg.

We have received Part I of this work, devoted to the apple. It describes 942 varieties—a snug little list. When we have had leisure to look it over, we may cull something interesting from it.

The North American Sylva of Michaux, with Nuttal's supplement, has been published in six splendid royal octavo volames, by Robert P. Smith, of Philadelphia, with notes by J. Jay Smith, Esq. It contains 277 finely colored copperplate engravings. It is a work that should be in every library in America. We shall soon give some extracts from the work, and a specimen of the plates.

The fourth volume of Humboldt's Cosmos is finished, and in the hands of the publisher. We way expect it soon.

Foreign Notices.

The New Crystal Palace at Sydenham.—It is now pretty well known that the site chosen for the re-erection of the Crystal Palace is an irregular parallelogram of about 300 acres, extending from the Brighton Railway, where it has a frontage of 1300 feet (between the Sydenham and Anerley station), to the road which borders the top of Dulwich-wood, where it has a frontage of 3000 feet. The fall from this point to the railway in question is stated to be about 200 feet. It was at once felt that the most eligible position for the new building was on the summit of this hill, and immediately adjoining the road. The building placed in so commanding a situation will be visible from London on the one side, and from a vast extent of country on the other. The only little inconvenience attending its erection on a hill is the want of water to supply the various fountains with which the terrace garden and park are to be decorated. This, however, is to be overcome by boring for it at the bottom of the park, near the railway, and raising it in pipes underground by steam power to a large reservoir at the north end of the building, to the top of a tower, on which it will again be pumped up, so as to give sufficient fall for the gigantic purposes to which it will be afterwards applied. Notwithstanding the wetness of the weather, the heavy operations connected with the formation of the terrace garden and the ground work in the park are now in rapid progress. About 1000 laborers have been employed for the last three weeks in levelling the ground, and forming basins for the various fountains, &c. As yet, however, nothing has assumed its proper form; and therefore, to an ordinary observer, all is in the meantime apparently confusion. We understand, however, that everything will be on a grand scale, so as to correspond with the noble building itself. We learned from Mr. Milner, to whom the

carrying out of the work has been entrusted, that on the park side of the palace, and running parallel with it during its whole length, will be a raised terrace walk 48 feet broad, which will be approached from the basement floor of the building immediately under the center transept (for it is to have three) by a flight of granite steps 120 feet wide. This walk will be furnished on the side farthest from the palace with balustrades and bastions, which will overlook a grass slope 50 feet wide; and then a terrace garden ornamented with flower beds on grass, fountains, shrubs, and trees, and intersected in various directions by broad gravel walks. This garden will be 300 feet in breadth, closed in at the ends by the two projecting wings of the palace, and cut off from the park by an ornamental terrace wall, also furnished with bastions and balustrades. The two projecting wings of the building will terminate in two towers, each 96 feet in height, from which, as well as from the various bastions, a fine view of the terrace gardens, the park, and the wide spreading valley beyond, will be obtained. The most extensive view of the surrounding country, however, which is on all sides highly picturesque, will be had from the building itself, along whose whole length we learn there is to be an open colonnade. A walk 96 feet broad will lead, by a flight of steps of the same width, from the center of the terrace garden to a fountain and circular basin, 192 feet in diameter, at a little distance in the park; and after passing round this basin, will proceed in the direction of Penge Church, till it terminates in another circular basin and series of magnificent fountains, whose equals will only be found in such great gardens as that of Chatsworth itself. To give some idea of the magnificence of the display that may be expected to be found here, we may mention that the center column of water will raise 230 feet in height; around that will be four fountains, each 120 feet in height, and these again will be surrounded by 16 others, each 72 feet in height. Nor is this all; there are other groups as grand, besides multitudes of smaller decorations of a similar character, which in themselves will doubtless be worthy of Sir Joseph Paxton's skill and experience in the construction of such matters. On the south-east side of the great fountain just described, will be a lake covering 5 acres of ground; other ornamental water will chiefly consist of two stripes on either side of the principal walk, just below the first fountain. These are to be each 450 feet in length, and will be fashioned into cascades, which will fall into broader pieces of water on the right and left of the walk, and lying at right angles to it, each 1000 feet long. These two latter pieces will each contain fountains of great power and beauty, so that there will certainly be no want of decorations of this kind, which tend so much to set off pleasure-grounds to advantage. On two little knolls on either side of the principal walk, but at some distance from it, will be a flower garden with an arbor or some erection of that kind in the center, and all round these, as well as in the neighborhood of the fountains, and indeed all in front of the terrace garden down to the south-east extremity of the ornamental water, will be dress grounds, interwoven with walks, margined with flower beds and shrubs, of which it will be seen an immense quantity will be required both for this portion of the park and for the terrace garden. Report says that 50,000 scarlet Pelargoniums have been contracted for. Sir Joseph Paxton, however, we believe possesses classified lists of what plants of the kinds wanted, English nurseries are capable of supplying; but with respect to purchases, little definitely has been done, with the exception of the buying Messrs. Loddiges collection mentioned at page 616. It will thus be seen that the gardening operations connected with this great undertaking are as yet comparatively in their infancy, and the directors will have much to do before all that we have mentioned above shall have been completed. Beyond the dress ground will be the open park, the Anerly side of which, where there is a considerable extent of wood and thicket, will be converted into a kind of gipsy ground, by forming walks through the wood; but not otherwise materially altering its natural character. This will afford an agreeable and cool retreat from the scorching heat of a summer's sun. By way of conclusion, we may mention that a new branch railway from Sydenham will set the visitor down on the south-east side of the park, at the end of a glass-covered walk, 48 feet broad, which will connect the station with the palace.—*London Gardeners' Chronicle.*

FIRST Moss Roses.—On the first introduction of the old red *Moss* Rose, it was sent over with some plants of Orange trees from the Italian States, to Mr. WRENCH, then a nurseryman and gardener at Broomhouse, Fulham, in or about the year 1735. It remained in that family nearly 20 years, without being much noticed or circulated until a nurseryman of the name of GREY, of the Fulham nursery, now Messrs. OSBORN'S, brought it into note. In speaking of the first production of the the white *Moss* Rose, which took place in the year 1788, the first birth was from a sucker or under-ground shoot. My father, HENRY SHAILER, nurseryman, of Little Chelsea, an extensive grower of *Moss* Roses,* perceiving it to be a *lusus naturæ* from a stool of the red *Moss*, cut it off and budded it on the white *Provins*, or *Rose La Blanche Unique*. The buds flowered the following season a pale blush; he budded them again the following season; it became much whiter; it was then figured in ANDREW'S *Rosery*, under the name of SHAILER'S *White Moss*. He then sold it out, the first plants to Lord Kimbolton, then to the Marquis of Blandford, Lady de Clifford, the Duke of Gloucester, &c., at five guineas per plant. He continued to sell it at that price for three years; he then entered into a contract with Messrs. LEE & KENNEDY of Hammersmith, they taking as many plants as he could grow for three years, at 20*s.* per plant, binding him not to sell to any one else under 42*s.* per plant. After cutting down the shoots which produced the *White Moss*, it threw up two weak shoots which he budded from; they flowered the second season from the buds; that was the birth of the *Striped Moss* Rose, a most beautiful and delicate variety, but when grown very strong, apt to go back to the original parent. The first production of the single *Red Moss* Rose, in 1807, was a sport of nature; my father sent some plants of *Moss* Roses down to a nurseryman of the name of ESSEX, in Colchester; on the receipt of a letter from that person, I went with my father to see it when it was in bloom; I took some cuttings away with me to bud; and fetched the original plant away in the following autumn to our nursery at Little Chelsea; from there we sent the first plants out at 5*s.* On the first production of the old *Scarlet Moss* Rose, which is a semi-double, it flowered on a plant given by my father to his brother, F. SHAILER, of Cook's Ground, and Queen's Elm, Chelsea, in 1808, nurseryman; the first production of the *Moss de Meaux*, was from a sport of nature from the old *De Meaux*, in the neighborhood of Bristol, but brought into a high state of perfection by Messrs. LEE, of Hammersmith. The birth of the *Sage-leaf Moss* Rose, I must claim myself; it was a sport of nature; I discovered it on a Sunday afternoon, in the month of June, 1813; I sold the whole stock to Messrs. LEE, of Hammersmith. It has a delicate shell-like form, and is a beautiful blush; it is now nearly extinct. The Rose *Blanche Unique*, or *White Provins*, was discovered by Mr. DANIEL GRIMWOOD, of Little Chelsea, nurseryman; he was on a journey of business in the county of Norfolk, in the month of July, 1775, when riding very leisurely along the road, he perceived a Rose of great whiteness in a mill; he alighted, and on close inspection he discovered it to be a *Provins* Rose; he then sought an interview with the inmate of the mill, who was an elderly female; he begged a flower, which was instantly given him; in return he gave her a guinea. In cutting off the flower he cut three buds; he went to the first inn, packed it up, and sent it direct to my father, at his nursery, Little Chelsea, who was then his foreman, requesting him to bud it, which he did, and two of the buds grew; in the following autumn he went down to the same place, where for five guineas he brought the whole stock away; he then made an arrangement with my father to propagate it, allowing him 5*s.* per plant for three years; at the expiration of that time he sold it out at 21*s.* per plant, my father's share amounting to upwards of £300. Mr. GRIMWOOD sent the old lady at the mill a superb silver tankard, &c., to the amount of £60. The *Shailer's Provins*, or *Rosa gracilis*, so named by Messrs. LEE, was raised from the seeds of the *Spineless* or *Virgin's* Rose, sown by myself in 1799, and flowered in 1802; we raised numerous varieties from seed up to 1816, generally selling them to Messrs. LEE, who sent them out under their own naming. I can vouch for the truth of the above. —*H. Shailer, in Gardeners' Record.*

* Faulkner's History of Chelsea.

Editor's Table.

Conversation over a Dish of Pears on New Year's Day.—Gentlemen, here is a dish of pears of which I should be glad to hear your opinion.

A. With pleasure sir; but be kind enough to inform us, in the first place, how they have been kept in such fine order. I had no idea that pears could be kept so well, and to tell the truth, I have never had much faith in winter pears. I have rarely seen one worth eating.

B. That has been my opinion; I would not give a good *Northern Spy* or *Swaar* apple for a bushel of the best winter pears I have ever seen.

Well, gentlemen, I am glad to have an opportunity of convincing you of your error. These pears have been kept in a cool, dry cellar, some spread on shelves, and some packed away in boxes among layers of straw. None of them have been ripened in a warm room; but I am sure that if they had, *some of them*, at least, would have been better than they are.

Now, by way of reserving the good wine to the last, we will pass around this handsome yellow pear, which I confess *looks* much better than it tastes. What do you think of it?

A. Barely tolerable sir. It is too dry and musky for my taste. It is not tender and melting, as I think a good pear ought to be.

What say you Mr. B.?

B. I agree with Mr. A.

Well, you are right, gentlemen. This is not really a good pear, *now*, for eating; but it is esteemed very highly in the kitchen, and I only brought it forward that I might tell you something about it. It is past its season; it should never be kept later than the middle of December. Up to that time it is pretty good to eat, and first rate for stewing and preserving. Then it is one of the best of growers and bearers, the tree is every year loaded with immense clusters, and they are always fair. Notwithstanding it has been cast out by the Pomological society, I still regard it as a most profitable and useful variety.

A. Would you recommend such a pear for a small garden?

No sir, by no means.

B. What is its name?

Bleeker's Meadow; it originated, I believe in Pennsylvania.

Well, here is another native pear, originated on Long Island. It is not so finely colored as the other, but you will find it more agreeable to the taste.

A. A good pear, sir; not buttery, like a *Virgalieu*, but juicy and fine flavored.

What say you Mr. B.?

B. I should call it good, sir, for this season of the year; and if it be a good bearer I should be glad to have a tree of it in my garden. What is its name?

Prince's St. Germain; a hardy, productive, valuable pear, and it keeps and ripens as well in the cellar as a *R. I. Greening* apple. I have always a full crop of it; but I find that on the sunny side of the tree, and on all the exposed parts, where the fruits get that brown or ruddy tinge you observe on some specimens, they ripen well and acquire a fine flavor:

while those green ones, from the lower and interior parts of the tree, remain hard and insipid. But this is pretty much the case with all winter pears.

A. Can this pear be grown on the quince stock? No sir; but you can "double-work" it, as the nurserymen say—that is, bud or graft some variety like the *Virgalieu*, or *Duchess d'Angouleme*, on the quince, and then graft the *Princess St. Germain* on that.

Here is another Long Island variety that is coming rapidly into favor. It is called the *Lawrence;* you have no doubt heard of it.

A. This comes nearer my idea of a good pear than either of the others. I should call this *very good.*

B. So should I; really melting and fine flavored, like a *Virgalieu* in October. I must change my opinion about winter pears. But do you mean to say this has ripened in the cellar?

Certainly it has; and it is moreover a good grower and a good bearer, succeeding well both on pear and quince stock, in the orchard or the garden. A gentleman on Long Island has planted a large orchard of it, to grow fruit for the market.

Now I will introduce you to a foreigner, none of your vain, swaggering pretenders, however, that assume great airs to captivate and astonish the natives; but a plain citizen, under whose rough brown coat you will find genuine merit, I think. The name is *Winter Nelis.* On the other side the water, it is called *Colmar Nelis, Bonne de Maline, Beurré de Maline,* &c. What do you think of it?

A. Excellent, sir, excellent; the best yet. Besides being buttery and juicy, it has a rich vinous flavor, surpassing all we have yet tasted.

B. A first rate example of modest merit. If we never receive anything worse than this from abroad, I would say *the more the better.*

Well, here is another almost, if not quite, as good, but less talked of and less known. I think by and by it must be very popular.

A. How remarkable its form—as round as an apple; and its color is as clear and bright a yellow as the *Virgalieu* in October; and how luscious, fresh, and high flavored. I think it comes quite up to the *Winter Nelis.* Don't you think so, Mr. B.?

B. I do, indeed; and it far surpasses it in beauty. How is its growth and bearing?

A capital grower, sir, and a good bearer; not so prolific as a *Bartlett* or *Virgalieu.* It grows equally well on pear or quince. The specimens you have tasted were grown upon the quince stock. It is almost past its season. Through all December it has been fine, eaten from the shelves in the cellar. It is called *Doyenné Sieulle.* You may note it as a first rate December pear.

We are not yet at the bottom of the dish, but the remainder of the gossip must be deferred till a future time.

Our Climate.—A fitful climate is ours, and it seems to grow more and more so every year. Some ten or fifteen years ago only, we reckoned upon such and such sorts of weather at certain periods of the year, especially during the fall and winter, with considerable certainty. We were able, in advance, to shape our course and trim our sail to suit the season of the year, and we were rarely disappointed. But latterly our calculations are all at fault, and we begin to feel that although we have studied our climate long and closely, we know very little about it, or that the little we do know affords us but a very uncertain guide in providing for the future.

This, the 10th day of January, 1853, is mild and sunny as the first day in April. The

Christmas Rose (*Helleborus niger*) is in full bloom in the border; Pansies are turning their cheerful faces to the sun, and if such weather continues, we shall expect the Crocuses to be pushing up and unfolding their gay petals. Yesterday a gentleman told us he saw robins in his garden hopping joyously around, apparently cheated into the belief that winter was over, or rather that it had forgotten to come. Draining, trenching, planting, and other out-door work, has been carried on to this time, with a few slight interruptions.

How different from last winter! It took us all by surprize. November had not fairly closed before we northerners were fairly ice-bound. Many of our tender plants were unhoused and unprotected; our autumn work was not more than half done. For a while people consoled themselves with the hope that it was only a squall and would soon break up; but it remained steadfast and grew more and more severe, until we were all exclaiming —"The coldest winter within our recollection." We are all apt to profit by experience, and especially by *dearly bought* experience. Hence, last autumn, along about the middle of November, there was such a preparation for winter as was never seen before. Plants were snugly housed; not a flaw in the glass, nor a crevice in the walls, but was securely stopped. Half hardy trees, unacclimated foreigners, were to be seen muffled up as though they were bound upon a visit to the regions of eternal snow.

These variations of climate, although attended with some difficulties, and frequently blight some favorite project, are not without their good. They arouse our energies, compel us to study, reflect and observe, with a spirit of perseverance that cannot fail to increase our stock of knowledge and multiply our resources. The memorably hard winter of 1851–2 taught us some lessons in horticulture that will not soon be forgotten. If the present winter continues as mild as it so far has been, or comparatively so, it will also teach us something. We have found that extremes of either heat or cold, rain or drouth, cloud or sunshine, are great teachers to those who cultivate the earth. Let us keep our eyes open and profit by what Providence wisely ordains to teach us wisdom, humility, and patience.

Pears and Prices.—We learn from the best authority, that sales of pears have been actually made at Philadelphia this season at prices calculated to give an impetus to their culture beyond any former example. One remarkable specimen of *Duchess d'Angouleme* pear was sold at Isaac Newton's Fruit and Ice Cream store, in Chestnut street, Philadelphia, for *One Dollar!* and *many* specimens not quite so large, but very respectable in size, produced seventy-five cents *each* as soon as they were displayed in the window. Now this is very encouraging, certainly, to a man who can purchase a tree for from twenty-five to fifty cents, and sell the produce at even half or quarter the above prices. In addition, we are assurred that Mr. Newton was selling a stock of *Vicar of Winkfield* pears, on December 2, 1852, at seventy-five cents a dozen, to eager buyers! Our correspondent says he immediately sat down and ordered pear trees for all the vacant spots he could find in his garden. We only add that we think him a sensible man.

An orange-colored Globe Amaranthus.—Messrs. Hovey & Co., of Boston, advertise seeds of a new orange-colored Globe Amaranthus, the heads of which they describe as being "one-half larger than the common, and of a deep, rich, glowing orange." It must be quite an acquisition among annuals.

Grapes.—The *Muscat of Alexandria* is considered by many of the most successful English grape growers as the best variety in cultivation. What say our growers? The *Black Barbarossa* is a new variety spoken of very highly in England.

PLANTING FOR POSTERITY.—"There," said a gentleman to us the other day, pointing to a fine group of pine and other trees, "my brother is about to build himself a house; those trees were planted for him by my father upwards of twenty years ago." How fortunate this man to have such a father. Here he builds his house among those fine trees, and enters at once upon their enjoyment. He gains twenty-five years of time, and not only that, the plantation has a ten-fold value in its history and associations. It is a family monument. A beautiful example this for fathers. Such an inheritance has a moral as well as a material value.

We have another instance of a like character. A widow lady, who possesses a large and beautiful estate in Western New York, informed us recently that she was about to plant and improve a tract of ground for the future residence of her son, who is yet a child.

Is there any other way in which parents can better provide for the physical future of their children?—anything that can impress the minds of children with more enduring gratitude to the parent and teach them their duty to posterity? We are happy to be able to record such instances. It shows that society is at least approaching a condition of *permanency*, without which it were vain, indeed, to expect people to project or execute any liberal plans of improvement for the future.

Taking a pecuniary view of the matter, what better legacy could a farmer, in one of our fine fruit growing districts, leave to his sons than an orchard of five or ten acres of apple trees or pear trees just coming into productiveness. Would it not be quite as well as purchasing for him a farm in the far west, scattering his family far away from the homestead and breaking up the ties that bind them to home and kindred? The migratory spirit that prevails so wide and deep among us is a deadly foe to that high culture which it is the wish of every man to see, and to all those feelings of attachment to home from which springs the brightest charms and greatest blessings of society. Think of these things you who are laboring so ardently for posterity. Turn your attention to planting. This is a kind of investment not easily affected by the ordinary ebb and flow of human affairs. Plant!—Plant for posterity!

DOMESTIC RAISINS.—We have just received a box of nice raisins prepared from the *Isabella* grape, by Mr. E. A. MCKAY, of Naples, Ontario Co., who has one of the most complete little vineyards in Western New York. We have passed these raisins around among our friends, and they have invariably been pronounced *excellent*, some preferring them to the imported article. Mr. MCKAY informs us that they keep well, and they certainly appear as though they would. Why may not this become an important branch of fruit culture? A very large amount of money is annually sent abroad for raisins. The matter deserves attention.

PRUNING—SHADE TREES—PEARS ON QUINCE.—Will you please to answer, through your first number, if convenient, the following queries, or give us an article or articles on them.

1. At what *times* in the year should the different kinds of pruning be performed in the cold latitudes of the north and in the milder climates of the south?

2. What are the twelve best shade trees (I mean deciduous trees) for lawns and streets in our cold climate?

3. What are the best three pears for double-working on quince; or, in other words, what three pears *unite* best with and grow most vigorously on the quince?

4. What pears of *American* origin will grow single-worked, or double-worked, on the quince?

In order to help the matter along, or rather to allow you a chance to criticise me, I will now attempt to answer these queries myself. My *present* opinions are, that

1. The heavy pruning (which is never necessary upon a well-trained tree) should be performed at the season when the leaves are off; the light pruning, in the season when the leaves are on the tree. I believe this rule will apply in *all climates*. But you, of course, will go more into detail.

2. The twelve best trees are, perhaps, American Weeping Elm, Horse-Chestnut, Sugar Maple, Norway Maple, Silver-leafed Maple, European Linden, White Ash, European Ash, American White Beech, Black Ash, Scotch Elm, Huntington Elm. To these, perhaps, we might add European Sycamore.

3. The pear which unites best with, and grows best upon, the quince, is the *Glout Morceau*. Indeed, this pear, in its leaf, wood, and fruit, seems to be a sort of second cousin to the quince, or at least as nearly related as *neighbor-in-law*. Other fine growers on quince, are *Beurré d'Amalis*, *Beurré Diel*, and *Vicar of Winkfield*. But please add to, or correct, the list, as it seems to you best. GEO. JAQUES.—*Worcester, Mass.*

[The above communication should have appeared in the last number, but was accidentally overlooked. The subjects touched upon are of such importance, and involve so many considerations, that instead of replying to them in the usual brief way, we have thought it better to take them up separately and treat them somewhat in detail, or in a series of articles, as suggested by our correspondent. Street and Avenue trees, and Pruning, have already been noticed. Other subjects will be found answered in the present number.—ED.]

THE CRESCENT SEEDLING ONCE MORE.—So many readers of the *Horticulturist* have expressed a wish to be more particularly informed respecting the *Crescent Seedling* strawberry, that I have written to Mr. LAWRENCE, of New Orleans, and learn from him that his manner of cultivating it is very simple. He says: "I give it all it requires to perfect its fruit, and check the luxuriance of the vines by reducing our rich, alluvial soil two-thirds—that is, I add two-thirds river sand to it. This mode likewise enables the plant to withstand the excessive hot months of June, July and August. In fact, the soil best adapted to my seedling is a sandy loam; and I also know, by experience, that the less manure of any kind used, the better it is for the plant. In planting, I never mulch; I place the plants 10 inches apart in the rows, and the rows 18 to 24 inches apart. In dry weather I water copiously two or three times, in as many consecutive days, and then let them take care of themselves for awhile. When the ground is moist from previous rains during the planting season, I never water. I transplant *every year* into new beds, as new soil is preferable to old, and besides, as I have noticed in a former letter, the old stools die out completely by over-production of fruit and incessant bearing. I gathered the *last fruit of the season* on the 25th of July, which is seven months, to a day, since they commenced bearing—December 25, 1851. This experiment of mine, accidental as it is, I consider as one among the wondrous productions of nature. A similar accident may not occur again for many years, and I have been always impressed with the belief that I have been aided and assisted by our climate in producing this truly extraordinary strawberry; and although I give myself but little credit, yet I am happy that it should be so widely known and favorably noticed throughout the Union, and, although I disliked it, I could not prevent my name going forth in this connection. My only aim is pleasure and amusement in this delightful climate of ours."

A few weeks ago Mr. LAWRENCE answered my minute inquiries on the subject as follows:

"1st. The runners *bear* the same season they strike.

"2d. It is the same identical plant which bears fruit so fine and large in January, and which continues to bear a constant crop until the July following. Weak plants are shy bearers at all times. I plant none but the strongest plants (runners); the weaker ones I neither use nor dispose of until such time as they are fit to set out. I am disposing of my seedlings so rapidly that it is doubtful whether I can supply the demand."

Mr. L., in a previous letter, informed me he had sold 20,000 plants. I consider Mr. L.'s suggestions, in regard to the cultivation of the strawberry, valuable for our soils and climate. I am no more disposed to enrich our soils for the strawberry, with ordinary manures, than Mr. L. It should be remembered that our seasons are of different length than the seasons at New Orleans. My *Crescent Seedlings* are very strong and vigorous, and I have already forwarded to B. M. WATSON, Plymouth, Mass., more than 250 plants, from the avails of eight feeble runners that were scarcely alive when set out in my garden on the 28th of May last. This fact indicates a vigorous plant, and I shall look with interest for its habit of bearing, next July and August. R. G. PARDEE.—*Geneva, N. Y.*

[We expressed an opinion, some time ago, in the *Genesee Farmer*, that this strawberry might disappoint those who expected it would be a perpetual bearer in the north. We did this without doubting in the least the correctness of the statements made by Mr. LAWRENCE, whom we believe to be an honorable man, or by Mr. PARDEE, whom we know to be in every respect, a gentleman worthy of confidence. Our doubts arose from the fact that in the south, in such a climate as New Orleans, where strawberries blossom and bear in January, it requires no great art to make any variety bear for several months, because, as Mr. LAWRENCE says, "the runners bear the same season they strike." But we are informed that *the same identical plants of the Crescent continue to bear for seven months.* This is the point we wished to get at, as it gives us some hope of obtaining successive crops in the same season here. The question will be settled during the coming season. *Cremome perpetual*, that attracted some attention in Europe a year or two ago, proves *not* perpetual. Similar discoveries at various times have proved deceptive.—ED.]

SUMMER PRUNING OF HARDY GRAPES.—You would oblige a subscriber by giving, in your journal, some instruction in the management of hardy grape vines: particularly summer pruning. In your "*Fruit Garden*," you direct that the fruit branch be pinched off at the second eye beyond the fruit; but do not say at what period of the year this ought to be done. Some writers direct the fruit branch to be stopped when the fruit is half grown. At this stage, many branches of the *Catawba* grape have extended six to eight feet—too late to stop with any beneficial results. Would it be safe to stop the shoot as soon as the grapes form? If not, at what period of growth ought the branches to be stopped?

In the same work you recommend the spur system of pruning, and say little of the renewal system. My objection to the spur system in open culture, is the difficulty in keeping the vine clothed with fruit branches from the base to the top of the trellis, which may be done by always fruiting on new wood and cutting out, at the spring pruning, all wood which has borne fruit. Under this system, the vines appear clean and vigorous, produce fine fruit without so much danger of being over-cropped, and may be confined to a small space for years.

The best mode of spur pruning I have seen practiced, is to prune to a strong full eye,

whether three or more eyes from the main branch; disbud all the eyes between the eye pruned to and the eyes at the base of the shoot. When the eyes at the base break, rub off all except one, which train for bearing wood the following year, and prune to the strongest bud, as before. But the renewal system is more simple, requires less cutting, and is, perhaps, the best mode I have seen practiced for garden culture. C.—*Louisville, Ky.*

[The object of summer pruning is to prevent the growth of superfluous wood, injurious not only to the fruit but to the bearing canes for the following season. Its effectiveness depends in a great measure on its being done early; for if the surplus shoots, or parts of shoots, are allowed to lengthen and mature their wood, pruning can be of little service. It should be done while the shoots are young and soft, when a knife is not necessary. The bearing branch should be stopped as soon as it has made two joints beyond the fruit, the day of the month being regulated of course by the season and local climate.

Spur pruning we recommended with reference to the management of hardy grapes on trellises covering a large space.

The "renewal" is more applicable to vines kept in a small space, and trained to stakes. —Ed.]

Fungi on the Apple.—In a recent report made to the "American Pomological Society," at Philadelphia, I mentioned in regard to the apples grown in Western New York (in one vicinity at least) that they were generally fair, and free from spots or blotches. Much to my regret, I find that many of the best sorts are this season affected with black spots upon them, which not only are on the outer surface but impregnates the flesh of the fruit with a bitter and corrosive taste. It prevails very much, as before said, in the best varieties, and very few are exempt. I have an opinion that it is a disease which is produced in a great measure from the great neglect observable in most all the orchards, in the trees not being properly trimmed. Most all orchards are *too thickly* planted, for one thing; so much so, that such a density of foliage, when the trees are maturing their fruit, collects and retains moisture that neither the sun or air has sufficient effect to keep off what may truly be called a mildew of unhealthy and pernicious gangrene, which centers on the skin of the apples and very much injures them, both as regards appearance and quality. I feel so impressed with the importance of the proper pruning of trees, that I wish that a score of practical men were thoroughly versed in the matter and would offer their services to growers of fruit trees, who in turn, I should hope, would employ such ones to trim their trees. It is painful to see such neglect toward trees that might be renewed from year to year by judicious pruning, and the fruit kept good, if not grow better and better.

I merely throw out these ideas in hopes that you will deem it of importance to furnish what *you* think a preventive. A handsome and fair fruit is as beautiful as a fair and beauteous woman, but the blemishes which I have been speaking of, mars the original beauty which nature gave to the apple and caused it to be so tempting. J. H. Watts.—*Rochester, N. Y.*

[The development of this parasitic fungus alluded to by Mr. Watts, is due more, we apprehend, to atmospheric influences than to any defective pruning or management. We see it prevails in certain seasons and in certain localities much more than in others. It was scarcely seen in Western New York until a year or two ago, and it is quite probable that next season we may be again exempted from it. The remarks, however, in regard to pruning are none the less worthy of attention, for really there prevails a very great negligence in this particular branch of orchard culture.—Ed.]

A. J. DOWNING.—In reply to the call of Prof. TURNER, in our last, we have been kindly furnished with the following interesting reminiscences by the author of "*A visit to the House and Garden of A. J. Downing*," in our January number.

"It was in the winter of 1851–2 that the writer first saw Mr. DOWNING. Happening to be at a small party where he was among the guests, just when the circle was breaking up, I was saluted by a tall, somewhat grave gentleman, who, after an introduction, cordially and frankly invited me to his house in Newburgh, naming the day and thus leaving no doubt in my mind as to the sincerity of his intention. As he talked to me, I observed that his eyes were of a peculiar beauty, large, dark, and finely shaped, inspiring confidence by their steady glance and friendliness of expression. His hair was long and dark, falling on his forehead somewhat, and aiding the poetic character of his face. In his mouth lay the key to the secret of his success. Wide, and rather compressed, and not well opened in speaking, it expressed will and perseverance in no common degree and ballanced the less stern and more flowing character of the upper portion of his face. His figure was slight and graceful; neat and precise in his dress, which was seldom of a lighter hue than black, his manners had a certain gravity and restraint through which a close observer could easily distinguish the possibilities of a large and generous humour. To all who are familiar with his writings, it is unnecesary to say that Mr. DOWNING's vein of humor and delicate sharp-cutting satire, was by no means the least of his gifts. These powers shone out in his conversation, which was rich and varied, and made him a welcome addition to the troupe of private theatric stars whose performances so often made his house ring with mirth. One of Mr. DOWNING's performances in this way, we well remember. It was a charade, which, about Christmas time, was keeping the cheerful fire and lights to make our hearts glad with

"Mirth that wrinkled Care derides,
And Laughter, holding both his sides."

"Mr. DOWNING's share in the acting was a discontented traveling Englishman, who is fighting his way through the grand tour, and doing his best to make himself and his companions as miserable as possible. No words can do justice to the manner in which he fretted and teased, nor the solemnity with which he received "the inextinguishable laughter" that shook his audience. His acting was natural, unexaggerated, and, like everything he did, perfectly unaffected. Even in these slight and apparently unimportant matters, he gave a stranger, such as I was then, the impression of a man who attempted nothing that he did not feel confident he could perform in the most complete manner.

"In dispensing the hospitalities of his house, Mr. DOWNING was free and generous; his time, of course, was largely occupied with his immediate business, and his absences were frequent. Once a month he went to Washington, and his visit there generally included other places, Baltimore, Philadelphia, Newport, and some others nearer home, where he was building houses, or laying out grounds. My first visit was made a few days before he left for his monthly journey, and as the weather was stormy, and he much occupied with indoor work, I saw but little of the arrangement of his garden, but I had a fine opportunity to learn something of the man. This is not the place, nor is it my object, to analyze Mr. DOWNING's character. Another pen will shortly give to the world a fitter and more complete account than I have power to write—a life of Mr. DOWNING, to which these feeble hints and sketches, with which our journals have long abounded, will serve but as preface and introduction.

"I reached Mr. DOWNING's house late in the evening. The winter had been unusually severe; the river was frozen to a greater extent than is at all common; the ferry had ceased plying, and loaded wagons, sleighs filled with passengers shrinking from the cutting blasts that streamed up and down between the mountains; and, beside these, hundreds of foot passengers crossed, thro' the day, over this apparently frail, but in reality secure, bridge of ice. At night the spectacle was grander but less enlivening. It was not with an entire freedom from anxiety that I found myself

for the first time upon the ice, half way between either shore, with the moon and stars above me, and no sound save the low blowing of the winter wind and the dismal booming of the cracking ice. Perhaps this feeling added zest to the pleasure with which, after a long walk, I found myself standing by Mr. DOWNING's fireside in his handsome and cheerful library. There may have been something in this, but it was not all the secret, for subsequent visits lost none of their attractions with the opening river and the greater ease of access."

"I must detain the reader a moment to speak of a conversation held on the night of my first visit, which has such a bearing on the character of whom I write, as not to be without its value. We were talking of fame, and of how far it is desirable, and I do not know through what eye paths of episode we came to speak of legends and fairy stories, but we found ourselves on that enchanted ground, and each of us in turn saying which of these stories had been his favorite in childhood. One of us preferred, before all others, the story in which a fairy gives to some mortal the choice of three wishes; and after due discussion, we began to indulge our fancy with supposing that each of us had the gift of such a choice, what would he choose? One of us chose unbounded wealth; another, troops of friends; another, to be perfectly good. I remember Mr. DOWNING's choice; it was for a character of magnetic influence that should draw all men to him as a friend and benefactor, that should open paths to him wherever he might walk and render him capable of infinite service to his fellow men. Without this, he said, wealth would be nothing, and fame cold—the shadow, and not the substance, of a happy life. After this, there followed a long discussion. I remember nothing of it; the voice, full, round, and clear, the sincere look, and earnest conviction of the man, abide with me to this hour."

"Mr. DOWNING thought, and somewhere, I doubt not, has expressed his feeling in this matter, that men in America are too much absorbed in business, and make it too unlovely. American men in cities, and those in the country who are not in the open air when at their work, labor from sunrise to sunset in ugly, dark, ill-ventilated rooms, stewing their minds over interminable rows of figures, and their bodies over unhealthy stoves, and so year after year until the day is past for the active enjoyment of their money, and the long abused body takes its fair revenge. Mr. DOWNING was industrious, no man more so; but he made a pleasure of business, and when he closed his office door at night he welcomed recreation as heartily as he did the graver duties of life.

"The winter passed away slowly and unwillingly. The river gradually dissolved its bridge of ice; the snow slid from the far off tops of Skunnymunk and Butler Hill; and the Fishkill Creek, a quiet rambling brook in the heart of summer, swelled and foamed with the freshets of spring, and went tumbling and roaring to the turbid river. When I had last seen Mr. DOWNING's garden, the veil which winter had thrown over her beauties when he married her, was unremoved. The trees were bare, the cedars and other evergreens were beautiful with their snowy fruitage, and, to my mind, fairer than when summer shows their green; but life, chilled by the winter winds and cloudy skies, had grown and bloomed within doors, where, like the plants in the neighboring green-house, she laid up store of health and strength to bear the more active duties of the coming summer. C. C.

12¾ feet high, 3⅛ inches in diameter.

MAGNOLIA TRIPETALA.

The three-petaled-flowered deciduous Magnolia.

1 La Gitane. 2 Criterion. 3 Mignonette.
4 Sylphide. 5 Asmodea. 6 Perfecta.
7 Daphnis.